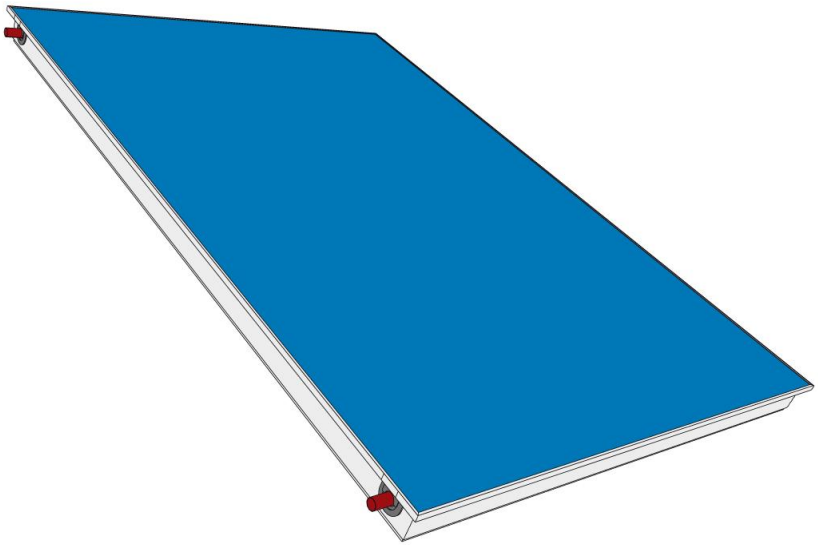
Dimplex
SOLAR



SOL202TIP – SOL808TIP
Tile Integrated Roof Kit
Installation Manual

0 Contents

0 CONTENTS 2

1 BEFORE YOU START 3

1.1 General 3
1.2 Competence 3
1.3 Health and Safety 3
1.4 Risk assessment 5
1.5 Tools required 5
1.6 Earthing and Lightning Protection 5
1.7 Pipe Work 5

2 SCOPE OF DELIVERY 6

3 PRODUCT FEATURES AND DESCRIPTIONS 11

4 COLLECTOR CONNECTIONS 11

4.1 Single collector portrait connection 11
4.2 Multiple collector portrait connection 12

5 INSTALLATION 13

6 OPERATION & MAINTENANCE 49

7 SPARE PARTS 50

8 DECOMMISSIONING 51

9 TECHNICAL DATA 51

1 Before you start

1.1 General

Thank you for choosing a Dimplex product. We ensure you that every effort has been made at the design, manufacture and delivery stages to produce a product with superior quality. We will provide you with the best possible support throughout the product's lifespan.
As part of on-going product development and improvement Dimplex reserves the right to undertake changes to the product without prior notice. Great care has been taken to ensure this manual was correct at the time of print. Should you however discover any issues with the information contained therein please do not hesitate to contact your vendor.
We strongly recommend reading the whole contents of this manual before commencing the work.

1.2 Competence

Dimplex products have been designed and manufactured to the current relevant standards and under stringent quality control procedures. It is therefore imperative that the product is only installed by a:
- trained and
- competent

person as defined in the relevant regulations. Dimplex does not accept any liability for damage done to persons or property resulting from undue handling and usage of this product.
All regulations current at the time of installation are to be considered alongside the content of this manual as they form the code of best practice.

The warranty of this product is linked to the ability to prove that the product was installed, commissioned and maintained:
- by a competent person
- in accordance with Dimplex instructions and the current relevant regulations and legislation
- the product being registered with Dimplex at the time of installation using the form in the Dimplex On Site Guide
- records showing the date of maintenance in accordance with the maintenance schedule as detailed in the On Site Guide

1.3 Health and Safety

The installation of this product is subject to the Health and Safety at Work Act. It is your responsibility to ensure that the transport, storage, installation and operation of the product is carried out in a safe manner.
Dimplex will not accept any liability due to damage caused to people or property resulting from negligence or not adhering to the relevant Health and Safety practices.

	Safety precautions: Before commencing mounting work on roofs, it must be ensured in all cases that the non- personal fall protection and fall-arrest systems required by DIN 18338 (Roof Covering and Roof Sealing Works) and DIN 18451 (Scaffolding Works) are in place. See also Builders' Protection Ordinance [Bauarbeiterschutzverordnung], Federal Law Gazette 340/ 1994, paragraphs 7-10! Other country-specific regulations must be observed!		Safety harnesses should be fixed above the users whenever possible. Safety harnesses should only be fastened to sufficiently load-bearing structures or fixing points!
	If non-personal fall protection or fall-arrest systems cannot be installed for technical reasons, all personnel must be secured by means of suitable safety harnesses!		Never use damaged ladders (e.g., wooden ladders with split runners or rungs, or bent or buckled metal ladders). Never try to repair broken runners, rungs or steps on wooden ladders!
	Only use safety harnesses (safety belts, lanyards and straps, shock absorbers, fall arresters) that were tested and certified by authorized testing bodies.		Ensure that ladders are put up safely. Observe the correct leaning angle (68° - 75°). Prevent ladders from sliding, falling over or sinking into the ground (e.g. using wider feet, feet suited to the ground or hooking devices).
	If non-personal fall protection or fall-arrest systems are not provided, working without the use of suitable safety harnesses may lead to falls from heights and therefore cause serious or lethal injuries!		Only lean ladders against secure points. Secure ladders in traffic areas by suitable cordoning.
	Ladders not properly secured against sinking in, sliding or falling over may lead to dangerous falls!		Contact with live electric overhead cables can be lethal.
	Whenever you are near live overhead electric cables where contact is possible, only work if: - it is ensured that they are voltage-free and this is secured for the duration of work. - the live parts are secured by covering them or cordoning them off. - the prescribed safety distances are maintained. Voltage radius: 1 m .....voltages up to 1000V 2 m .....voltages from 1000V to 11000V 3 m .....voltages from 11000V to 22000V 4 m .....voltages from 22000V to 38000V > 5 m in case of unknown voltages		Wear protective goggles when drilling and handling collectors!
			Wear safety shoes when carrying out installation work!
			Wear cut-proof safety gloves when mounting collectors!
	The manufacturer hereby guarantees to take back products identified with an eco-label and to recycle the materials used. Only the heat transfer medium specified may be used!		Wear a helmet when carrying out installation work!

Figure 1: Safety information

1.4 Risk assessment

The compilation of a risk assessment is strongly recommended before installing the product. The following areas require particular consideration in addition to the information required by the Health and Safety at Work Act.

- scalding: where appropriate or required by law a thermostatic mixing valve is to be fitted to the hot water outlet of the cylinder
- explosion: the unit is fully equipped with all relevant safety equipment to comply with current regulations. The correct design and function has been verified by independent third party testing. The correct application thereof is the responsibility of the competent installer.
- water borne organisms (i.e. Legionella): if applicable a risk assessment should be carried out following the recommendations outlined in the Approved Code of Practice L8.
- the user preference must be considered when commissioning the system, in particular when adjusting the solar and auxiliary system temperature and timer settings.

1.5 Tools required

It is recommended that the below list of tools be used when installing the integrated roof kit.

- 2 people required for installation
- Measuring tape
- Hammer
- Drill
- Adjustable pliers
- Angle grinder with stone disc
- TX 25 x 25mm torque bit
- Spirit level
- Plumb line
- Additional wood (as required)
- Pop-rivet gun

In addition to the above tools it may be required to wear suitable safety gloves upon installation as the kit consists of sheet metal which may cause cuts if care is not taken during handling of the product.

1.6 Earthing and Lightning Protection

If a lightning arrester is available, the collector frame should be connected to it. This may be performed using the collector frame, because the slot for mounting on the reverse side of the collector is ideally suited for fixing a thick cable. If no arrester is available, the potential equalization is carried out using a connection of a cable at the pipe(s) which are led into the building. Please consult local regulations to ensure adherence.

1.7 Pipe Work

The pipe work from the collector to the pump unit and from the pump unit to the cylinder is to be all metal. The joints have to be high temperature resistant (compression or high temperature flat seal). For more information please see Technical Manual.

The connections of a mounted solar collector/collector array may become excessively hot so care must be taken to avoid burns when working around collectors that are exposed to the rays of the sun.

2 Scope of delivery

Please check the contents and the condition of your delivery before signing the delivery documentation against the content shown in Table 1 and mark as appropriate. Contact your supplier immediately for any missing or damaged parts. Claims for missing or damaged parts after signing for the delivery documentation will not be accepted.

These mounting instructions only apply to the installation of the in roof flashing and the fixation of the collectors!

SOL202COL		
Part No.	Spare No.	Description
P31	74011	left front part
P32	74012	centre front part
P33	74013	right front part
P34	74220	lateral fixation bracket
P35	74222	centre fixation bracket
P36	74111	left lateral part
P37	74113	right lateral part
P38	74001	left collector cover
P39	74002	centre collector cover
P40	74003	right collector cover
P41	74230	connection strip
P42	74090	wooden wedge 600 mm
P43	74091	wooden wedge 1200 mm
P44	74061	left back part
P45	74062	centre back part
P46	74063	right back part
P47	74070	back part connection

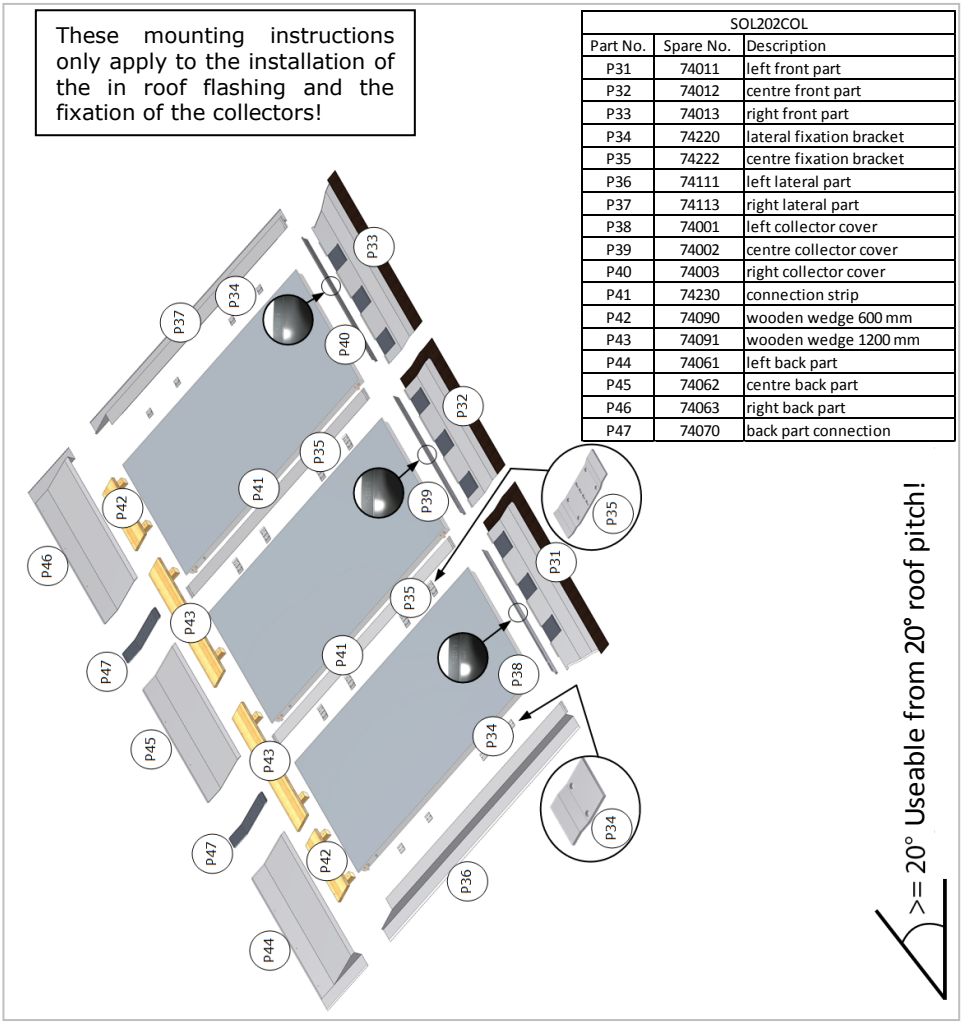


Table 1: Overview of flashing components part 1

SOL202COL		
Part No.	Spare No.	Description
P48	74014	front part single collector
P34	74220	lateral fixation bracket
P36	74111	left lateral part
P37	74113	right lateral part
P49	74004	single collector cover
P43	74091	wooden wedge 1200 mm
P50	74064	back part single collector

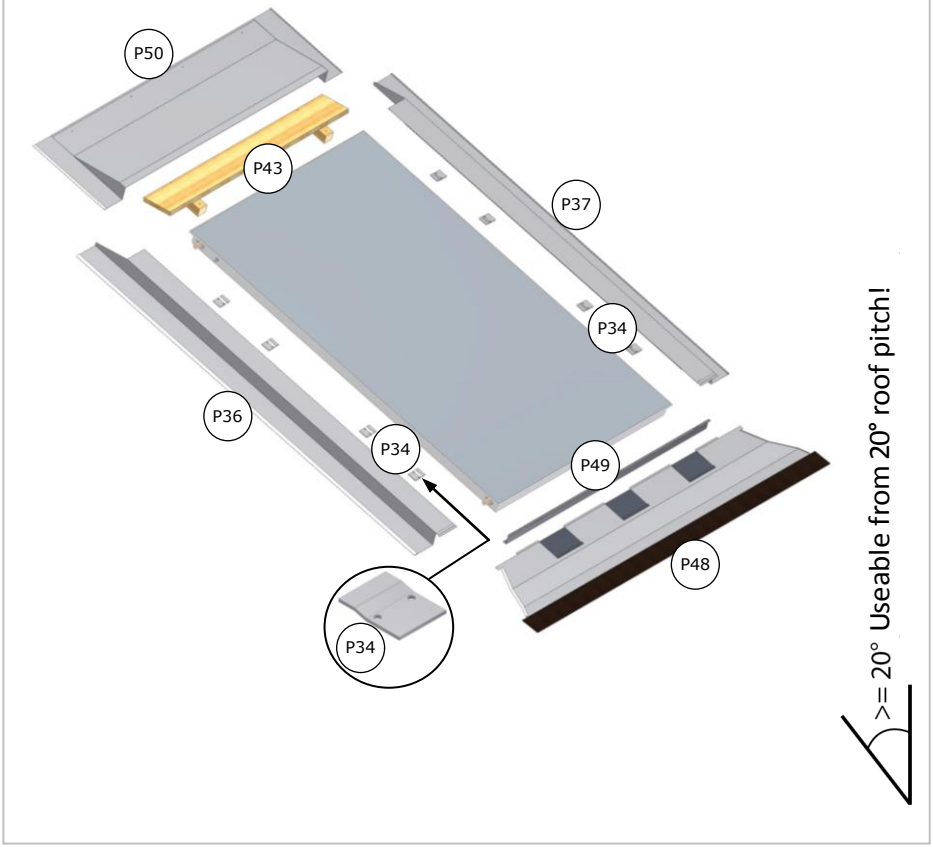


Table 2: Overview of flashing components part 2

No.	Designation			SOL202TIP	SOL404TIP	SOL606TIP	SOL808TIP
A	**Solar flat plate collector 2.02m²**			**1**	**2**	**3**	**4**
B	**Hydraulic connection set**			**1**	**1**	**1**	**1**
	P01	22mm x 90° elbow	x2				
	P02	22mm stop end	x2				
C	**Hydraulic interconnection set**			**0**	**1**	**2**	**3**
	P03	22mm x 22mm straight compression	x2				
#L	**Tile integrated set 2.02m²**			**1**	**0**	**0**	**0**
	P48	front part single collector					
	P34	lateral fixation bracket					
	P49	single collector cover					
	P36	left lateral part					
	P37	right lateral part					
	P43	wooden wedge 1200mm					
	P50	back part single collector					
M	**Tile integrated set 4.02m²**			**0**	**1**	**1**	**1**
	P31	left front part					
	P33	right front part					
	P34	lateral fixation bracket					
	P35	centre fixation bracket					
	P38	left collector cover					
	P40	right collector cover					
	P36	left lateral part					
	P37	right lateral part					
	P41	connection strip					
	P42	wooden wedge 600mm					
	P43	wooden wedge 1200mm					
	P44	left back part					
	P46	right back part					
	P47	back part connection					
N	**Tile integrated set extension**			**0**	**0**	**1**	**2**
	P32	centre front part					
	P35	centre fixation bracket					
	P39	centre collector cover					
	P41	connection strip					
	P43	wooden wedge 1200mm					
	P45	centre back part					
	P47	back part connection					

Table 3: Scope of components

Letters D to K are for the On-Roof Installation

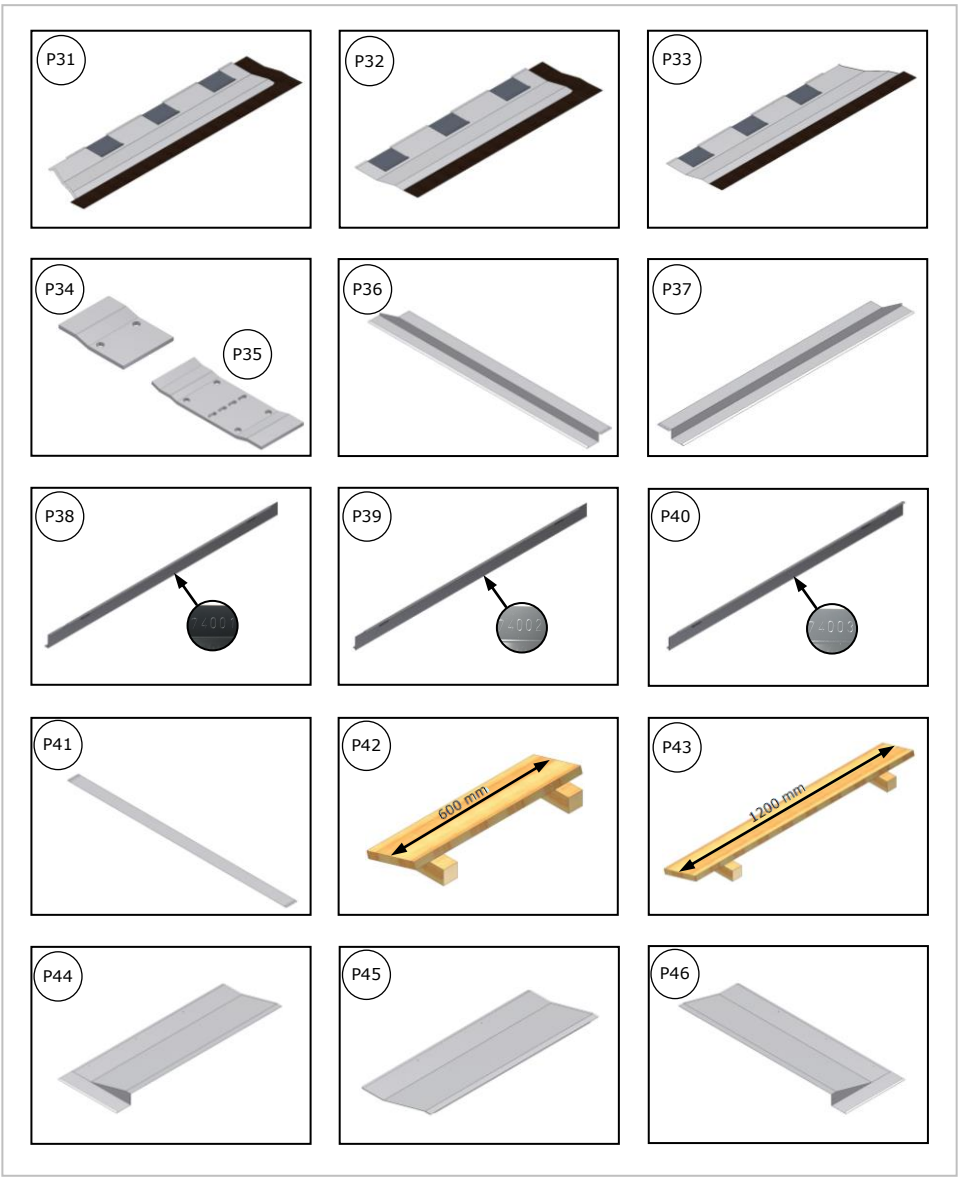


Table 4: Images of components part 1

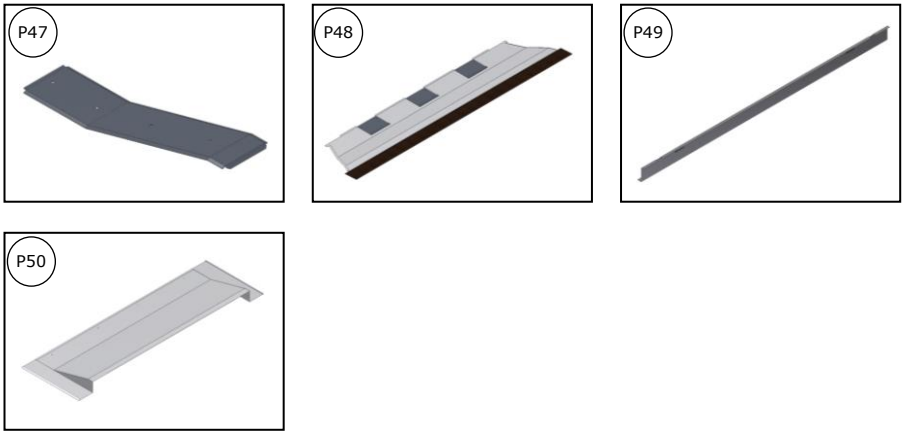


Table 5: Images of components part 2

3 Product features and descriptions

The Dimplex Tile Integrated Roof kit offers a unique solution for mounting solar thermal collectors to the roof of a building. The concept of the product is to make the installation of the collectors a quick and simple process.

The Tile Integrated Roof Kit can cater for 2m² up to 8m² of collector area and comes in four variations, 2m² kit, 4m² kit, 6m² kit and 8m² kit.

The product consists of various aluminium flashings and fixings that seal the collector against the roof covering in an aesthetically pleasing way. The collector is an integral part of the assembly and forms part of the weather tightness of the roof.

4 Collector connections

Due to its four connections, the collector offers a wide choice of connection options. Ensure that no part of the collector array or collector in the array is short circuited by following these instructions.

When planning the collector array, the position of the various connection parts must be in accordance with the diagrams, also pay attention to the position of the highlighted sensor pocket.

Table 6 illustrates the components required to make all the collector connections.

Part No	Image	Description
P01		22mm x 90° elbow
P02		22mm stop end
P03		22mm x 22mm straight compression

Table 6: Collector connection components

4.1 Single collector portrait connection

When installing a single collector installation, there is one connection option available. The sensor must always be installed at the top of the collector and on the connection where the heat transfer fluid leaves the collector.

Figure 2 illustrates the left hand side connection option that is applicable only to a single portrait collector connection.

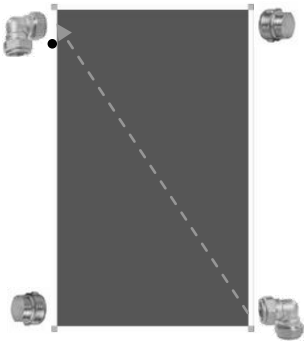


Figure 2: Left hand side connection option for single collector only

4.2 Multiple collector portrait connection

When installing multiple collectors, (2 up to 4), component P03 is used to connect one collector to the next.

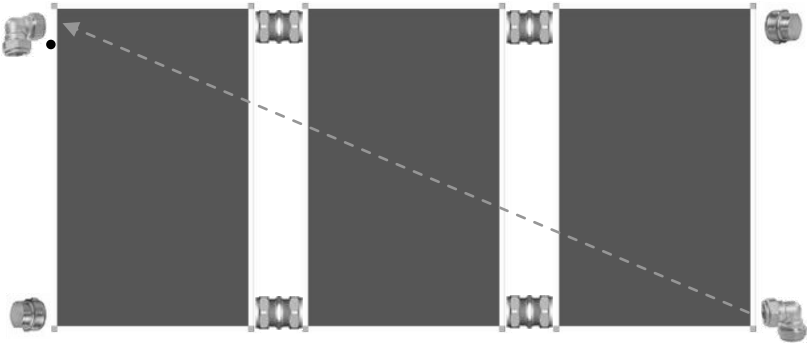


Figure 3: Multiple collector portrait connection

The sensor must always be installed at the top of the collector on the connection flow of the system.

5 Installation

NB: Ensure all the laths / roof battens under the area of the installation are in good condition. Replace any damaged, week or broken laths and double nail or screw to the rafters.

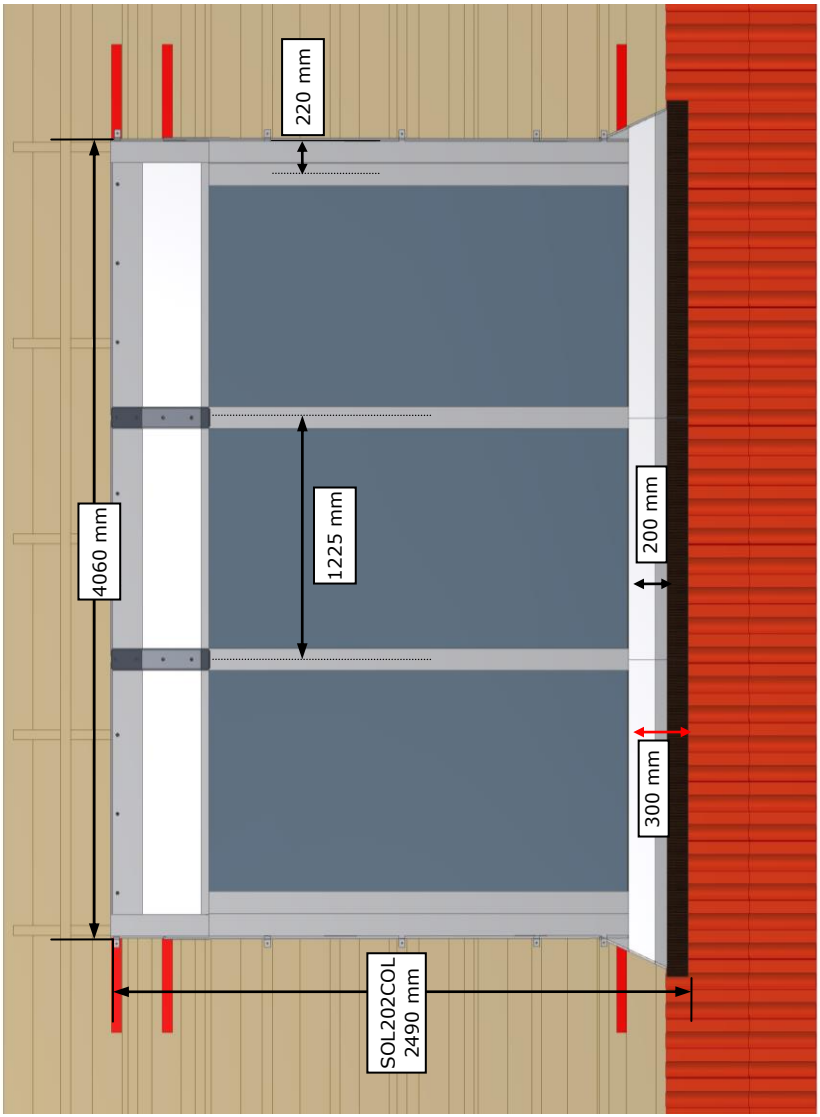
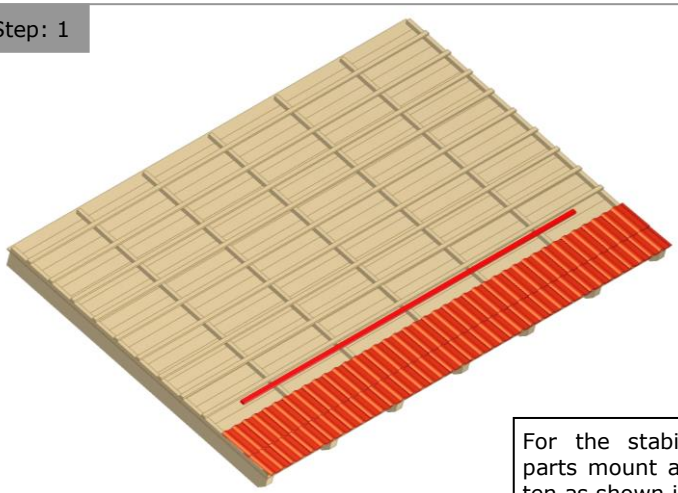


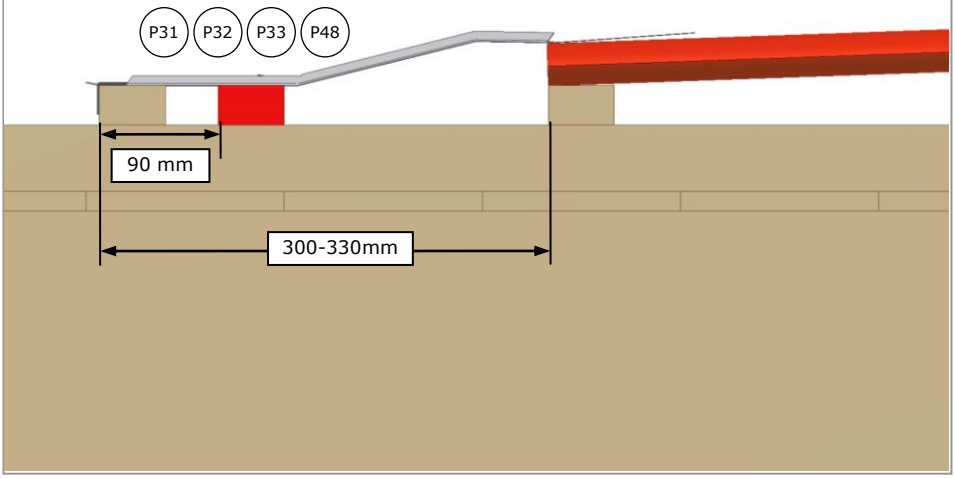
Figure 4: Mounted dimensions

Step: 1

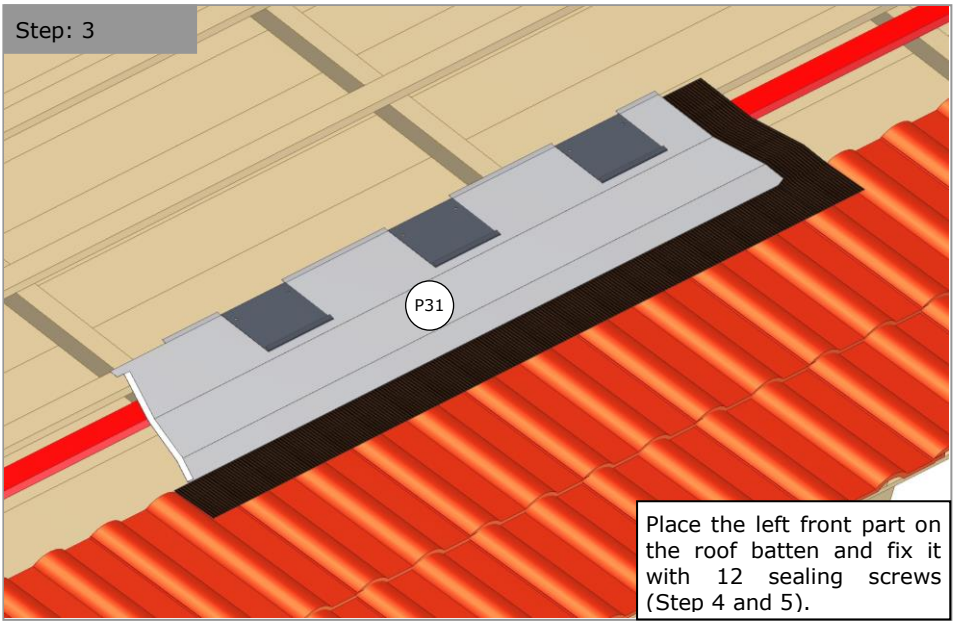


For the stabilisation of the front parts mount an additional roof batten as shown in Step 1 and 2.

Step: 2

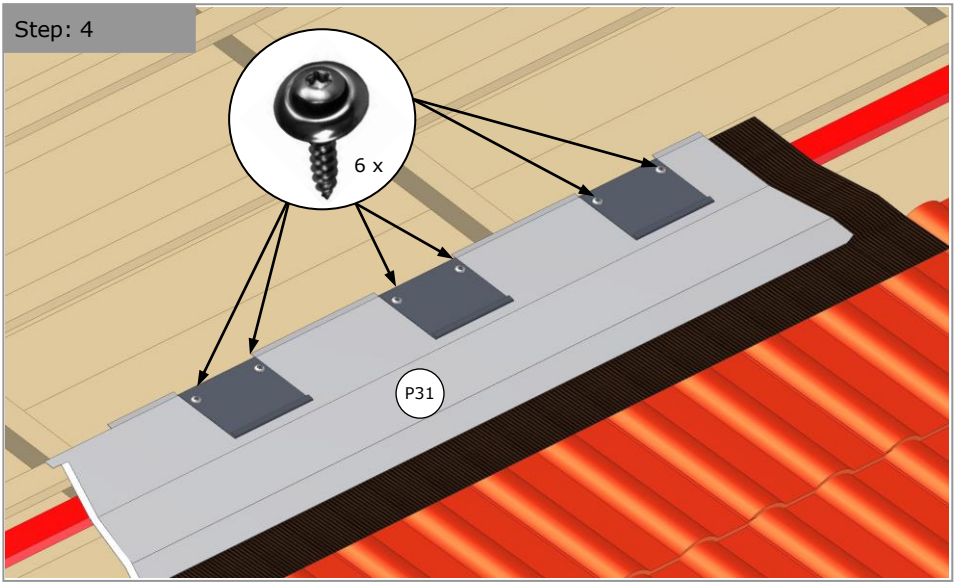


Step: 3

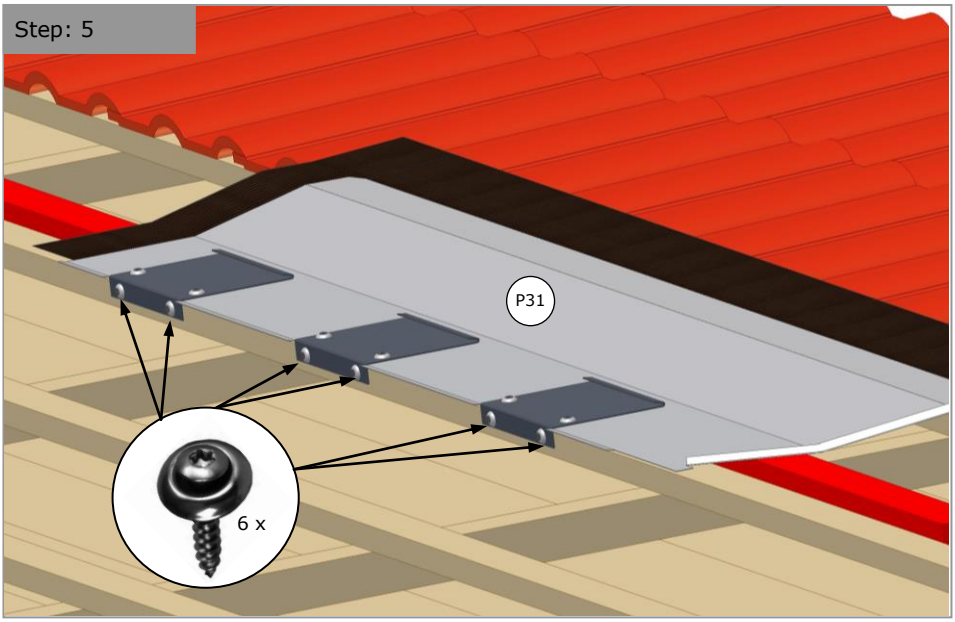


Place the left front part on the roof batten and fix it with 12 sealing screws (Step 4 and 5).

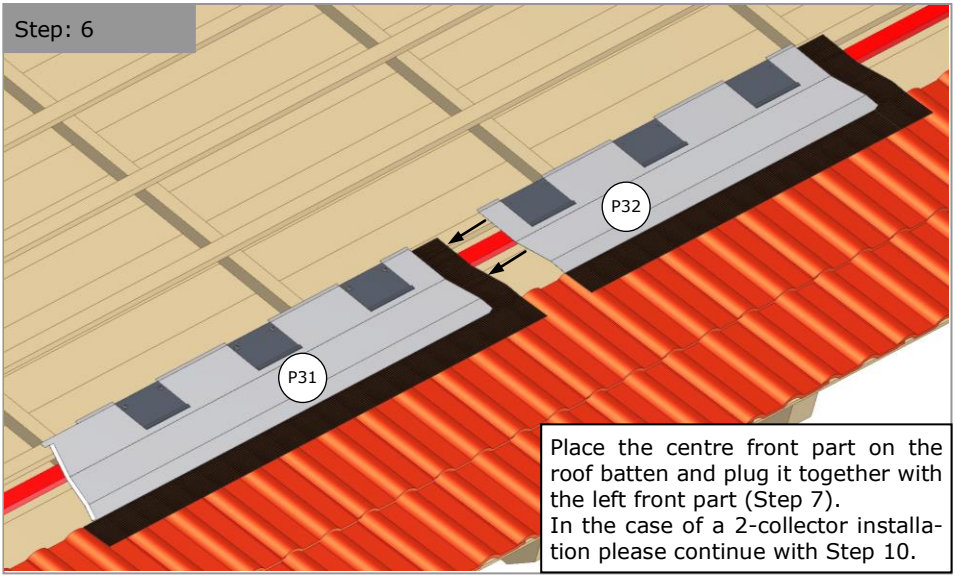
Step: 4



Step: 5

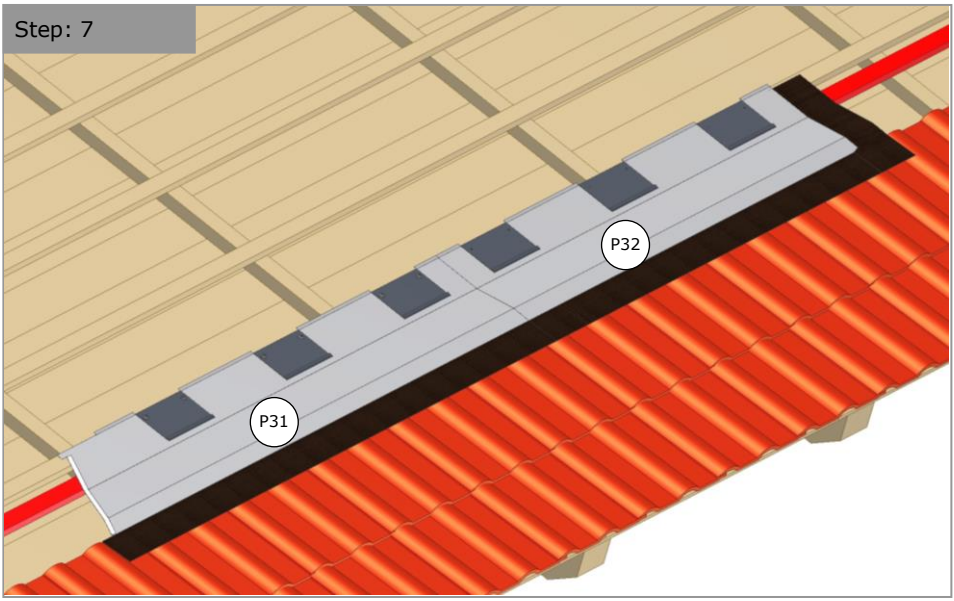


Step: 6

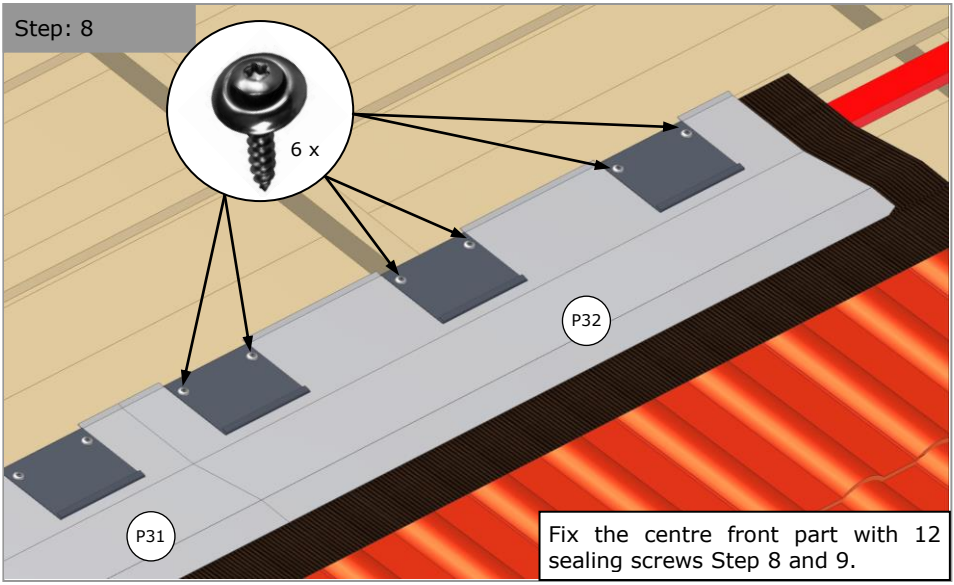


Place the centre front part on the roof batten and plug it together with the left front part (Step 7).
In the case of a 2-collector installation please continue with Step 10.

Step: 7

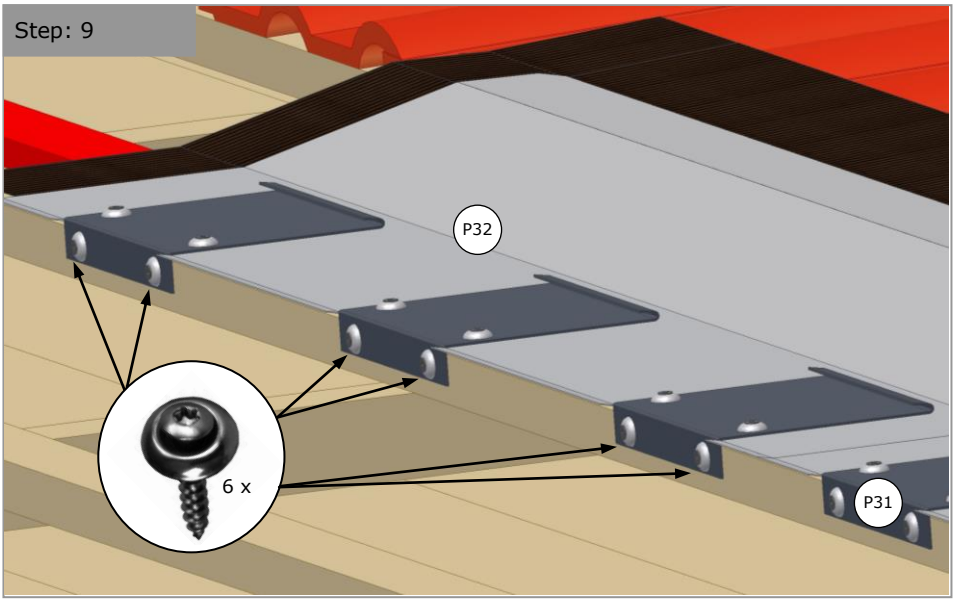


Step: 8

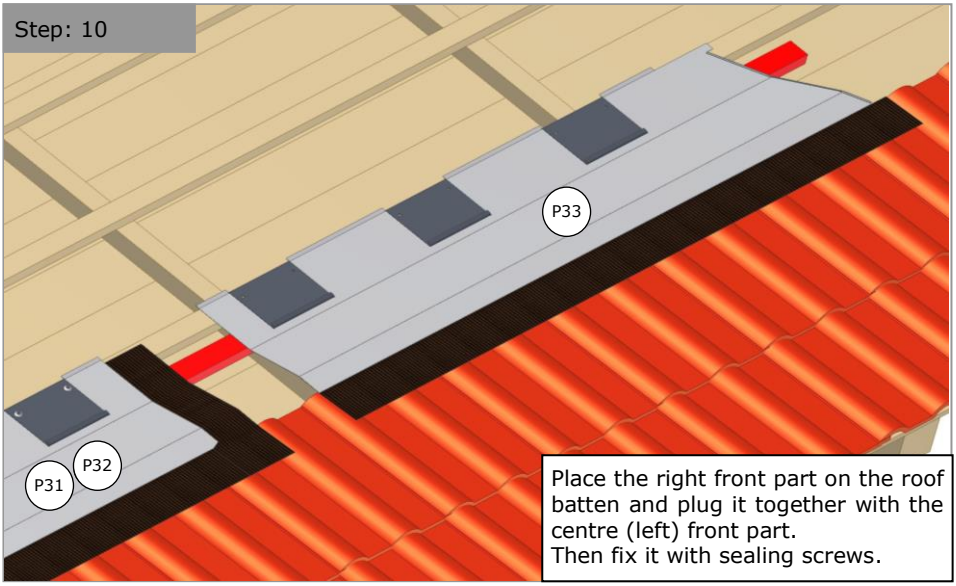


Fix the centre front part with 12 sealing screws Step 8 and 9.

Step: 9

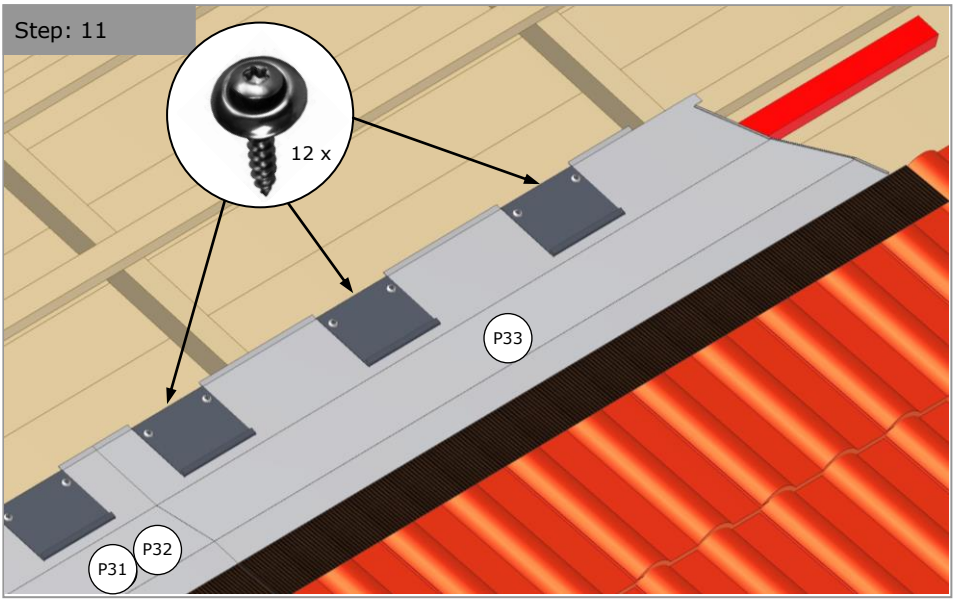


Step: 10

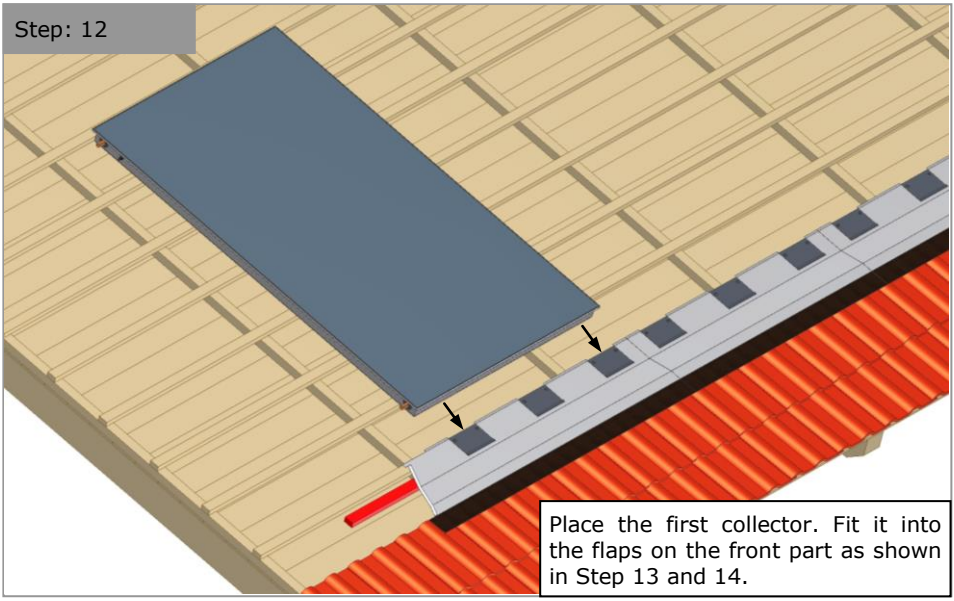


Place the right front part on the roof batten and plug it together with the centre (left) front part.
Then fix it with sealing screws.

Step: 11

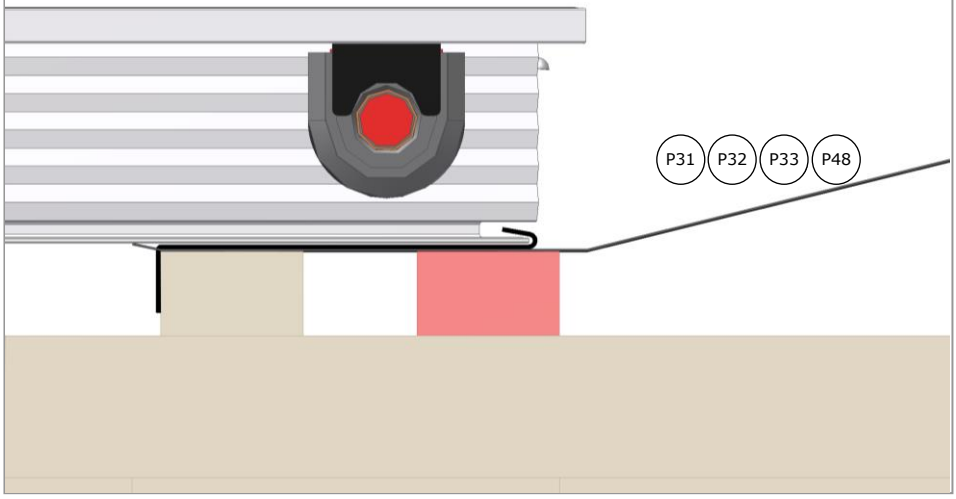


Step: 12

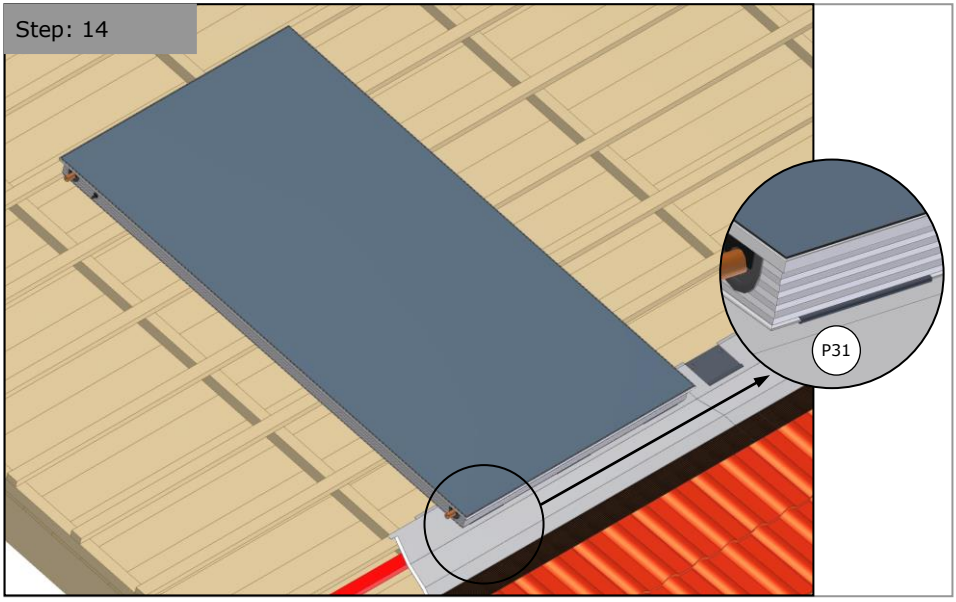


Place the first collector. Fit it into the flaps on the front part as shown in Step 13 and 14.

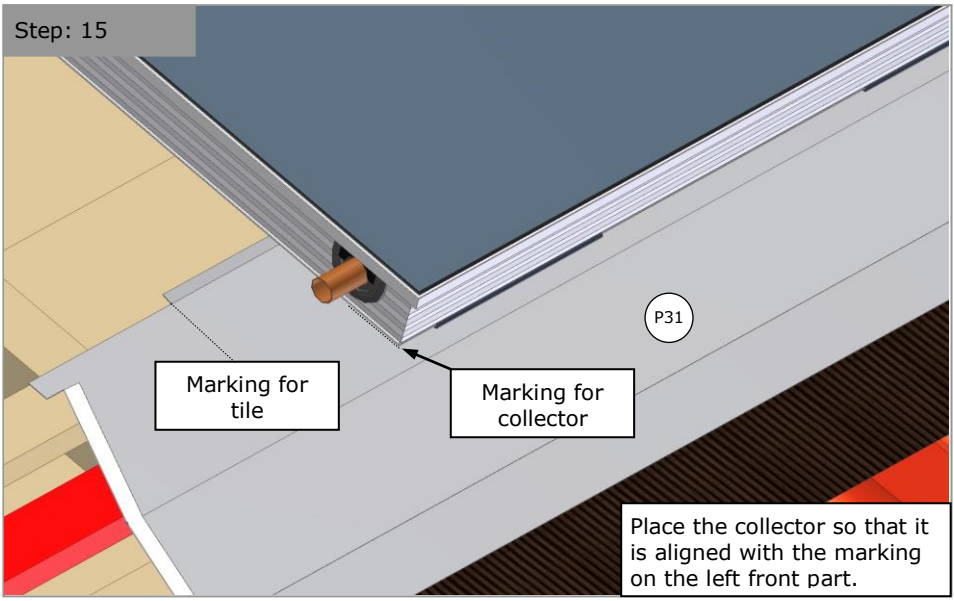
Step: 13



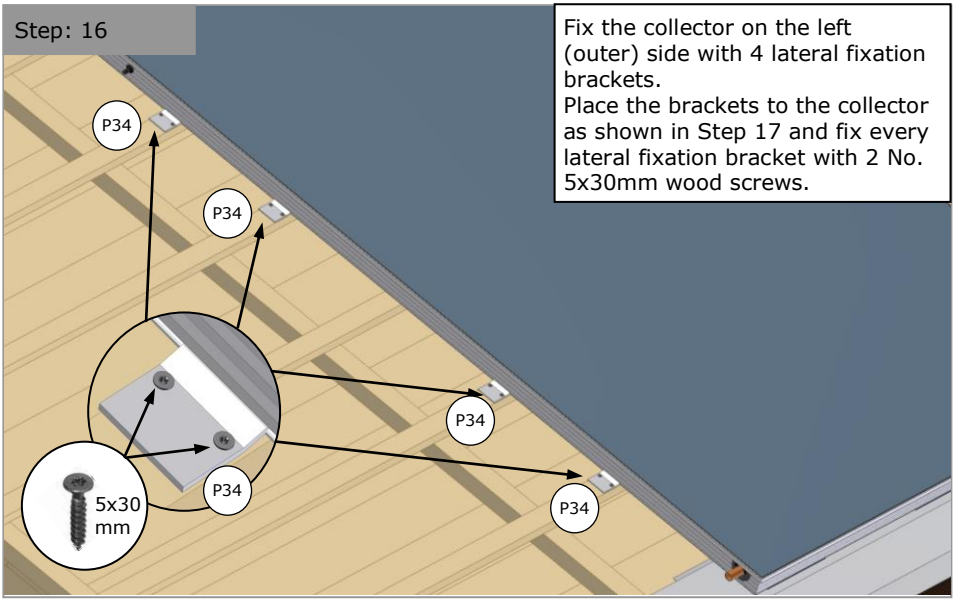
Step: 14



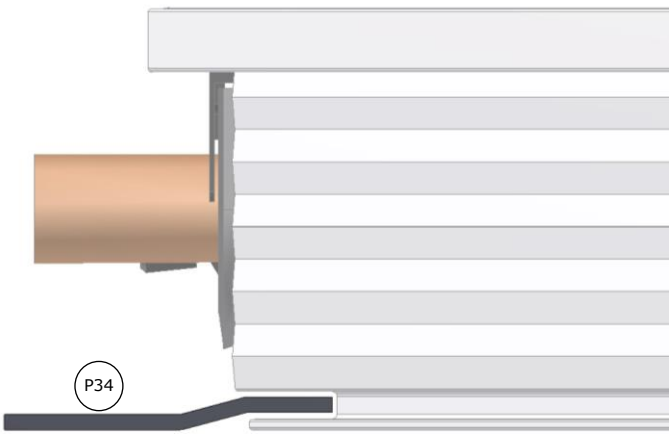
Step: 15


P31
Marking for tile
Marking for collector
Place the collector so that it is aligned with the marking on the left front part.

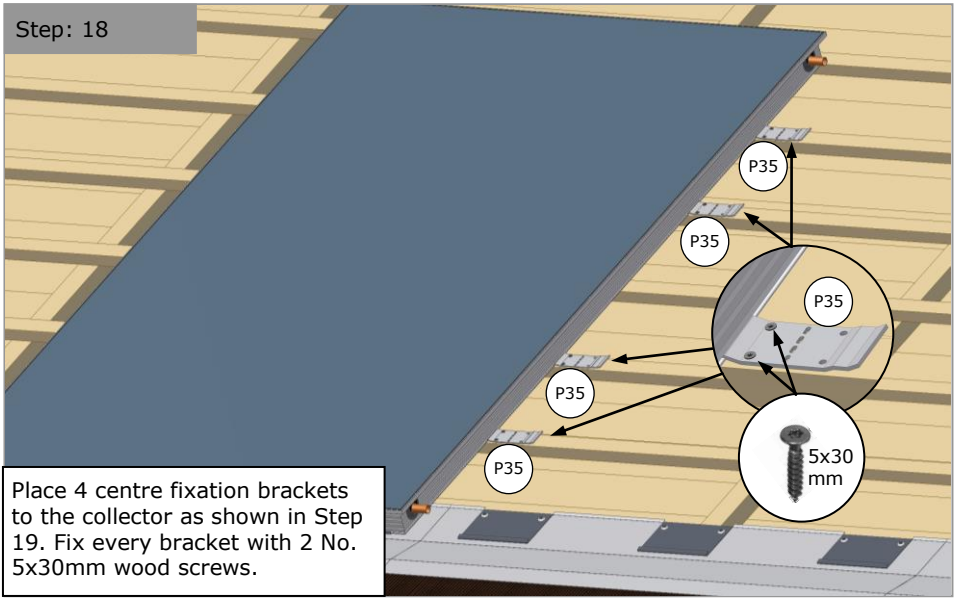
Step: 16


Fix the collector on the left (outer) side with 4 lateral fixation brackets.
Place the brackets to the collector as shown in Step 17 and fix every lateral fixation bracket with 2 No. 5x30mm wood screws.
P34
P34
P34
P34
P34
5x30 mm

Step: 17

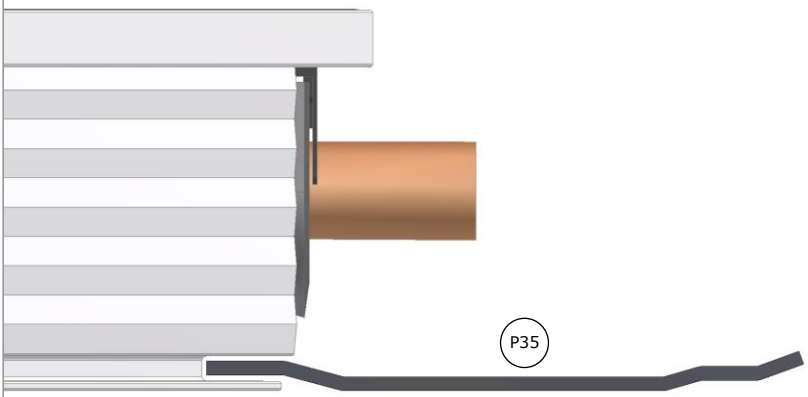


Step: 18

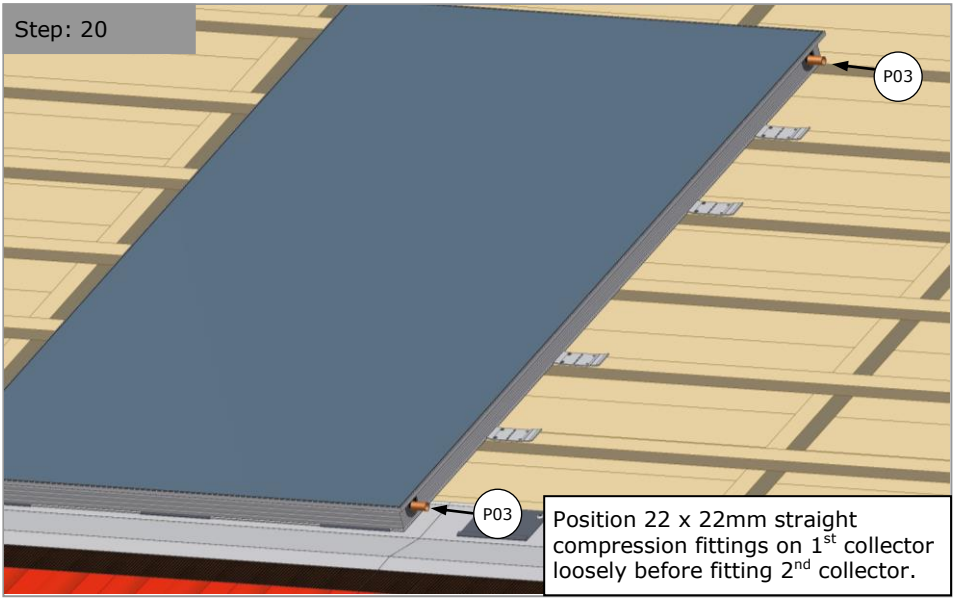


Place 4 centre fixation brackets to the collector as shown in Step 19. Fix every bracket with 2 No. 5x30mm wood screws.

Step: 19

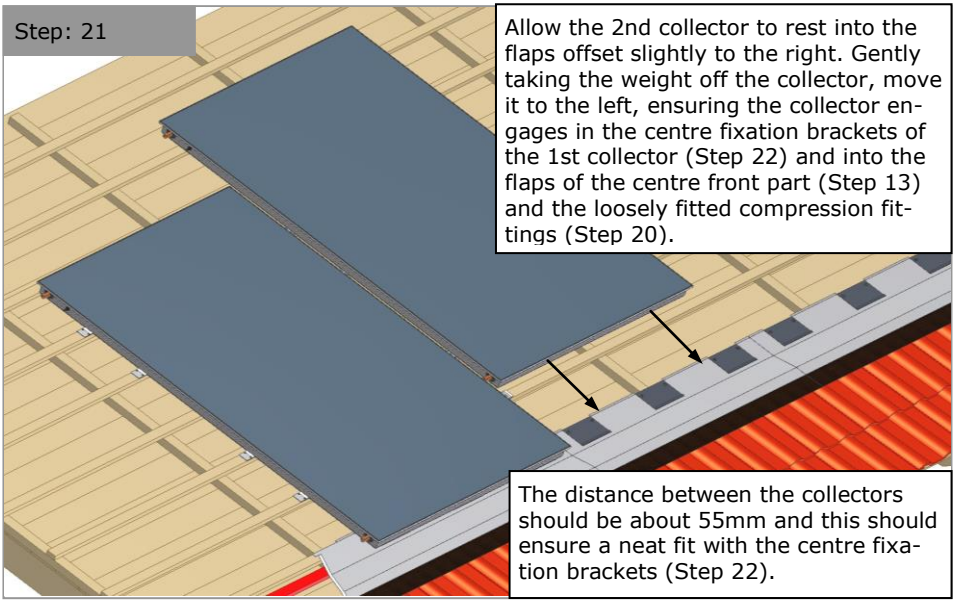


Step: 20



Position 22 x 22mm straight compression fittings on 1st collector loosely before fitting 2nd collector.

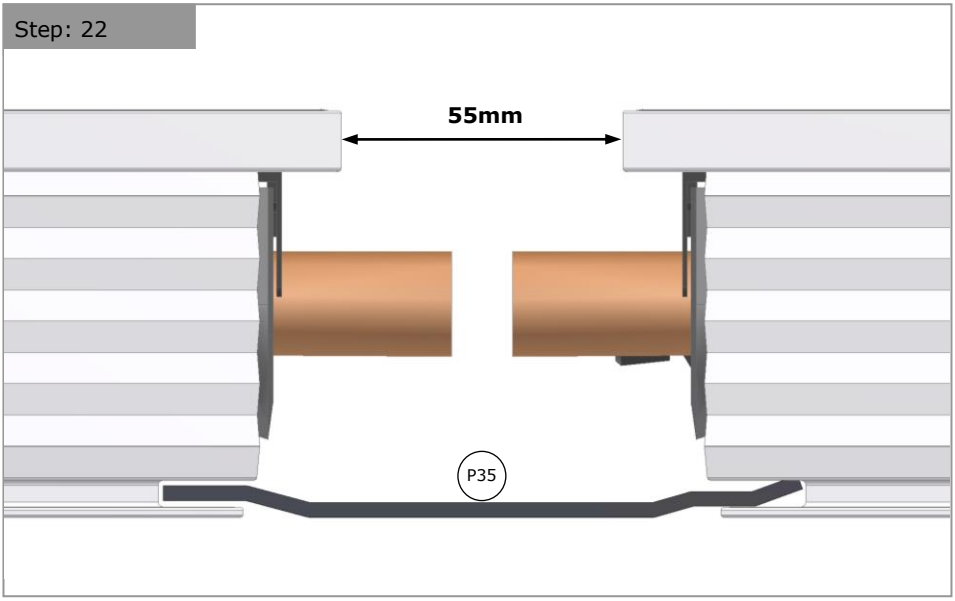
Step: 21



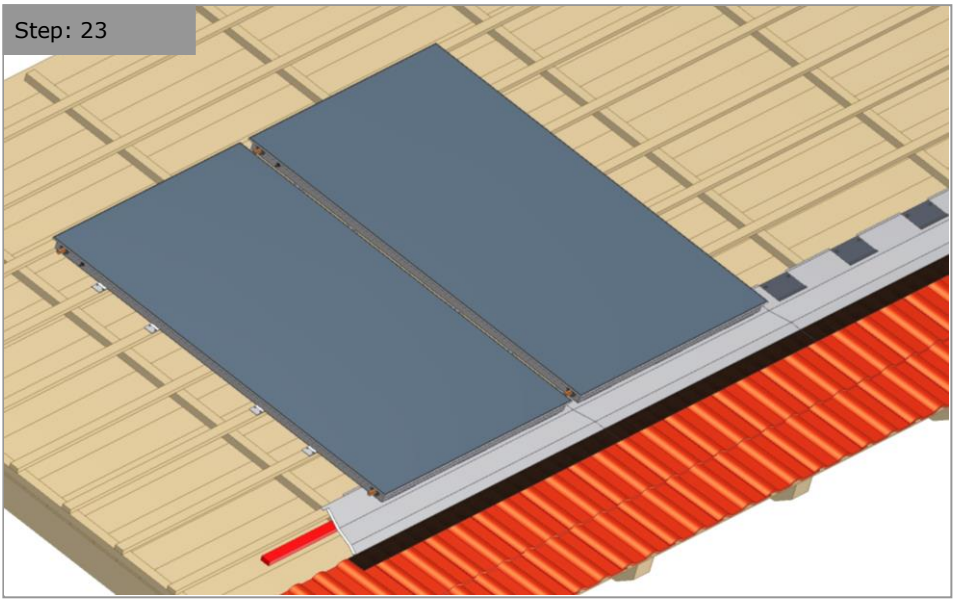
Allow the 2nd collector to rest into the flaps offset slightly to the right. Gently taking the weight off the collector, move it to the left, ensuring the collector engages in the centre fixation brackets of the 1st collector (Step 22) and into the flaps of the centre front part (Step 13) and the loosely fitted compression fittings (Step 20).

The distance between the collectors should be about 55mm and this should ensure a neat fit with the centre fixation brackets (Step 22).

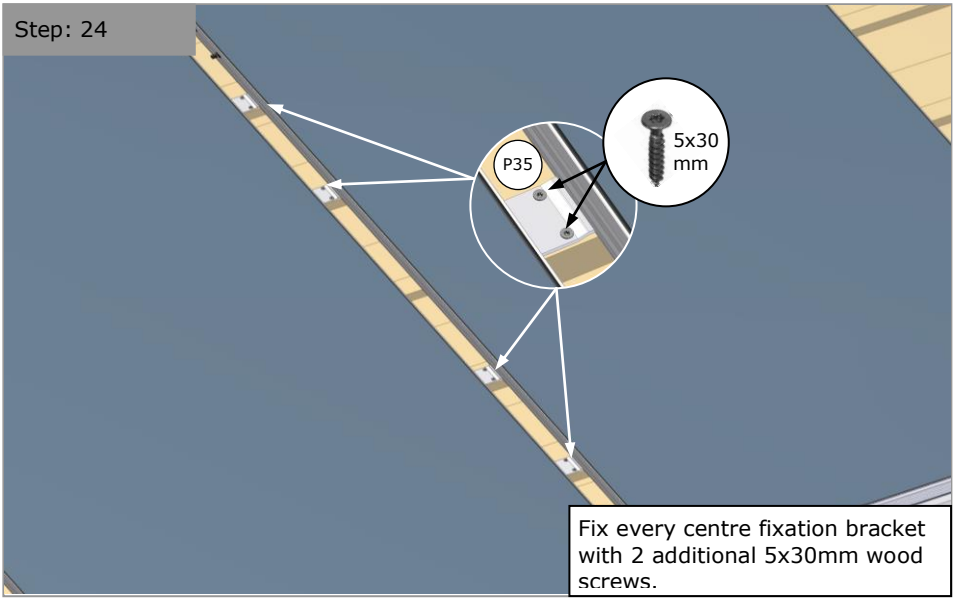
Step: 22



Step: 23

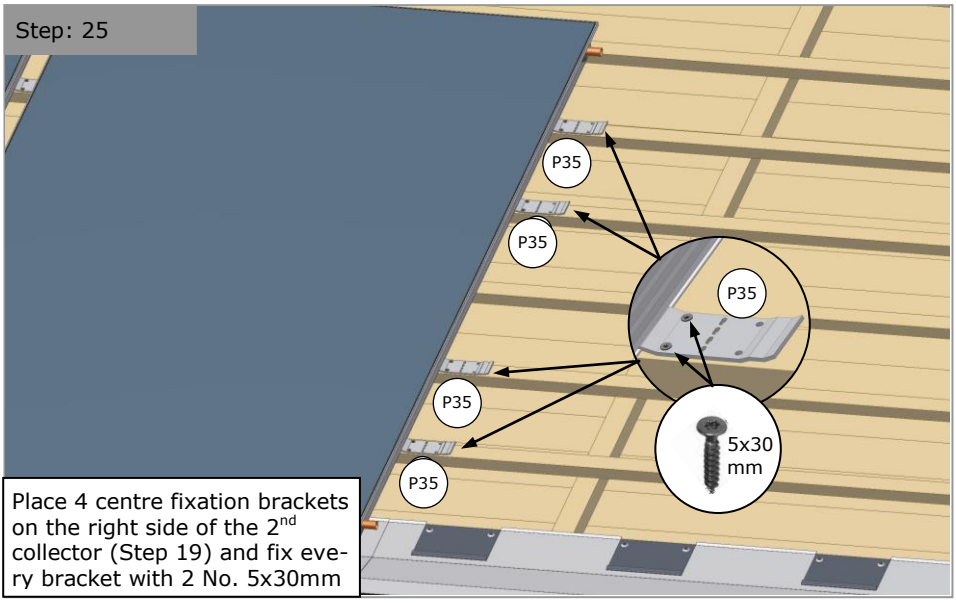


Step: 24



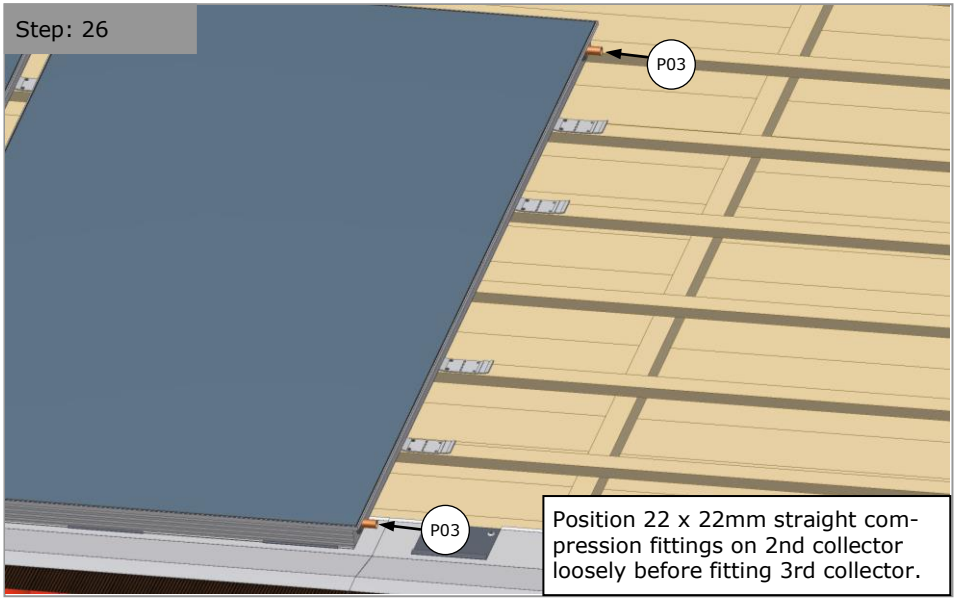
Fix every centre fixation bracket with 2 additional 5x30mm wood screws.

Step: 25



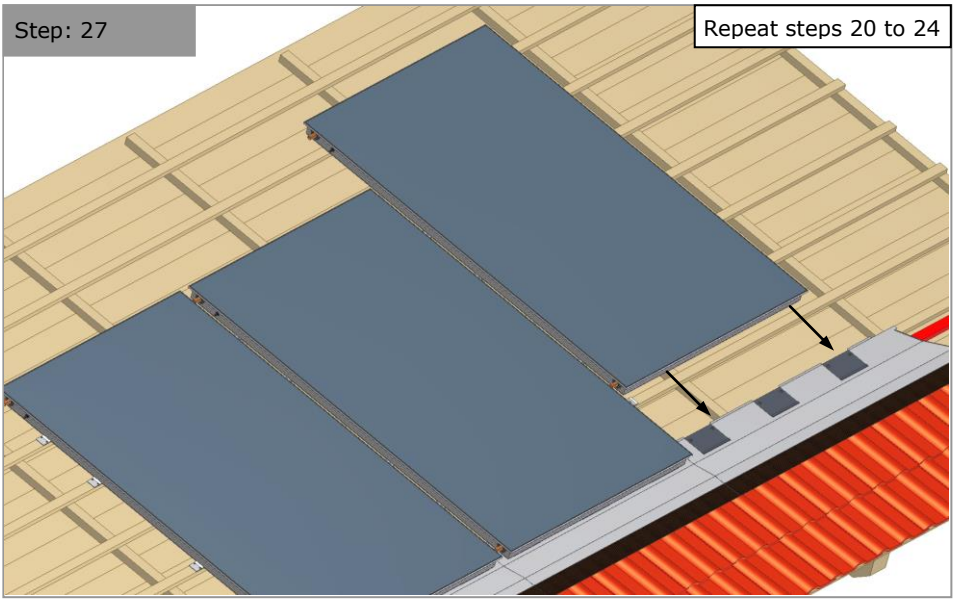
Place 4 centre fixation brackets on the right side of the 2nd collector (Step 19) and fix every bracket with 2 No. 5x30mm

Step: 26

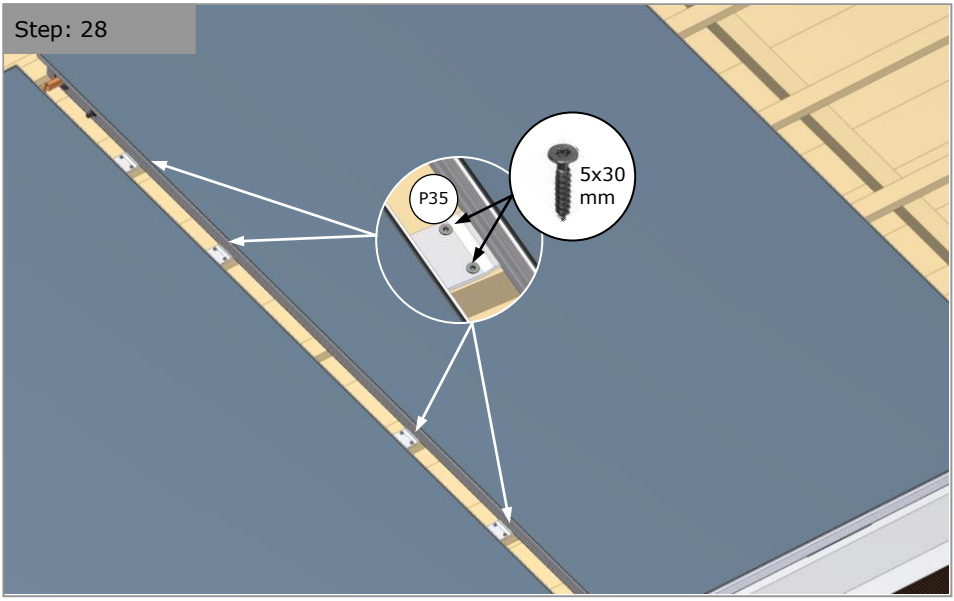


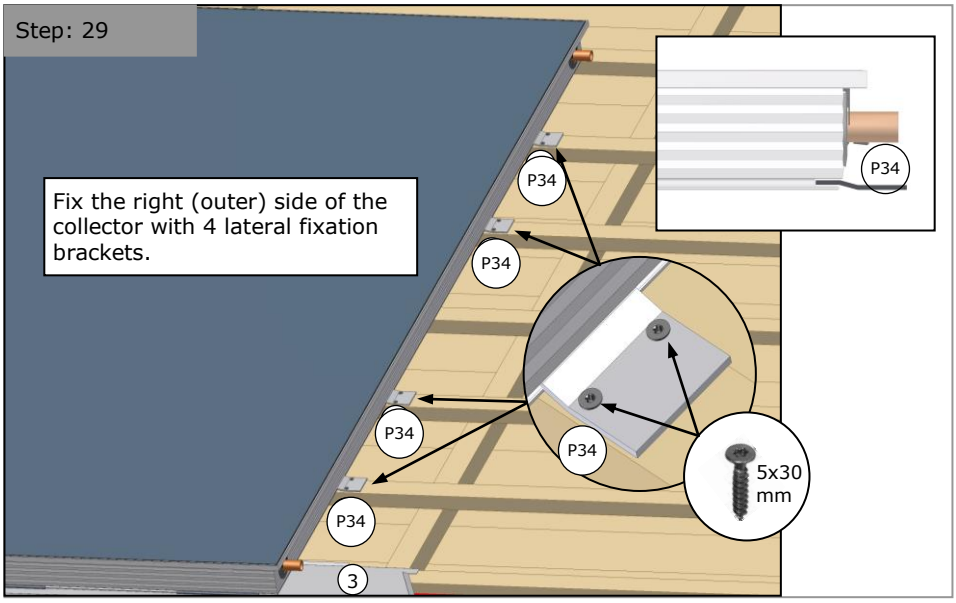
Position 22 x 22mm straight compression fittings on 2nd collector loosely before fitting 3rd collector.

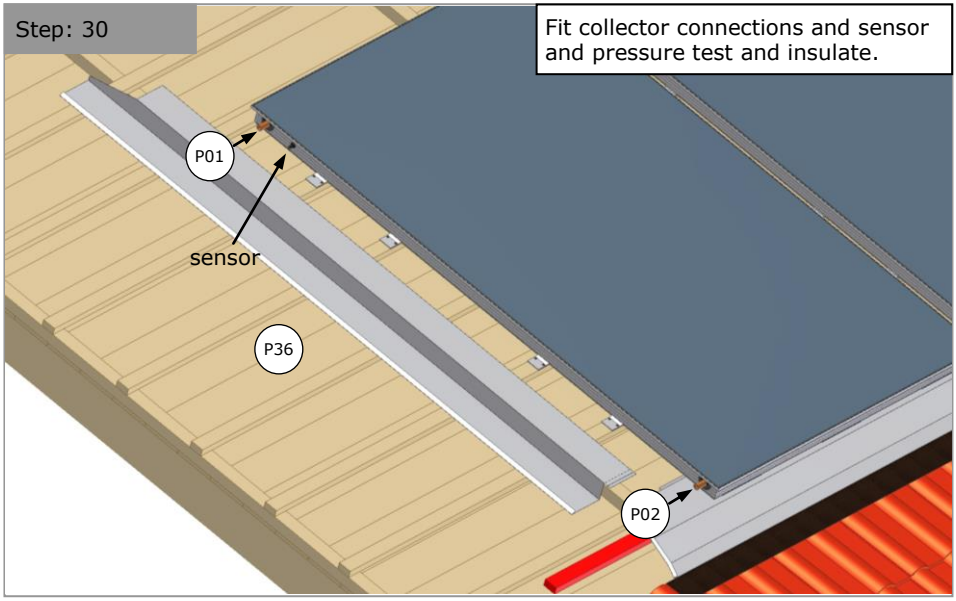
Step: 27



Step: 28



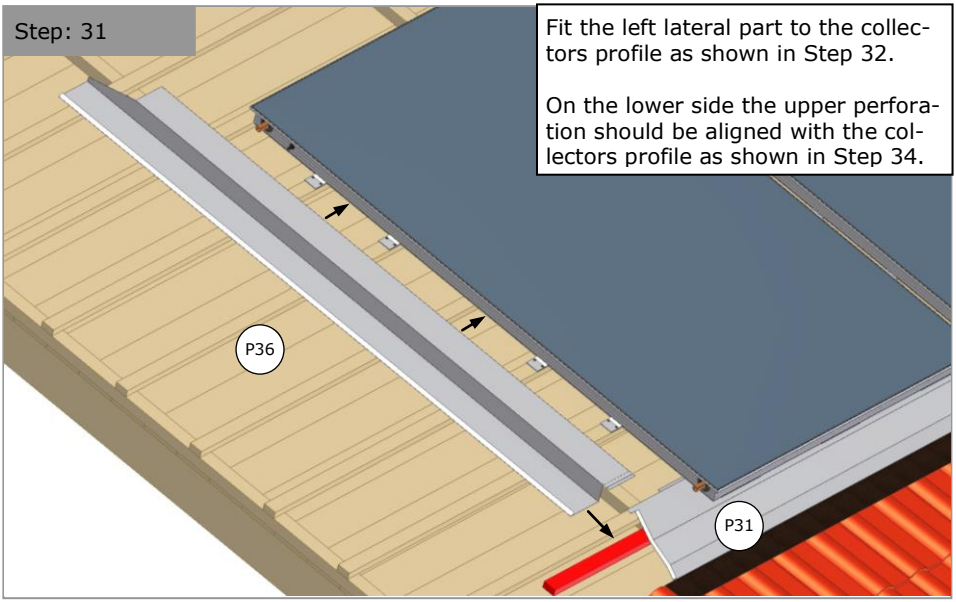

Step: 29
Fix the right (outer) side of the collector with 4 lateral fixation brackets.
P34
P34
P34
P34
P34
P34
5x30 mm
3


Step: 30
Fit collector connections and sensor and pressure test and insulate.
P01
sensor
P36
P02

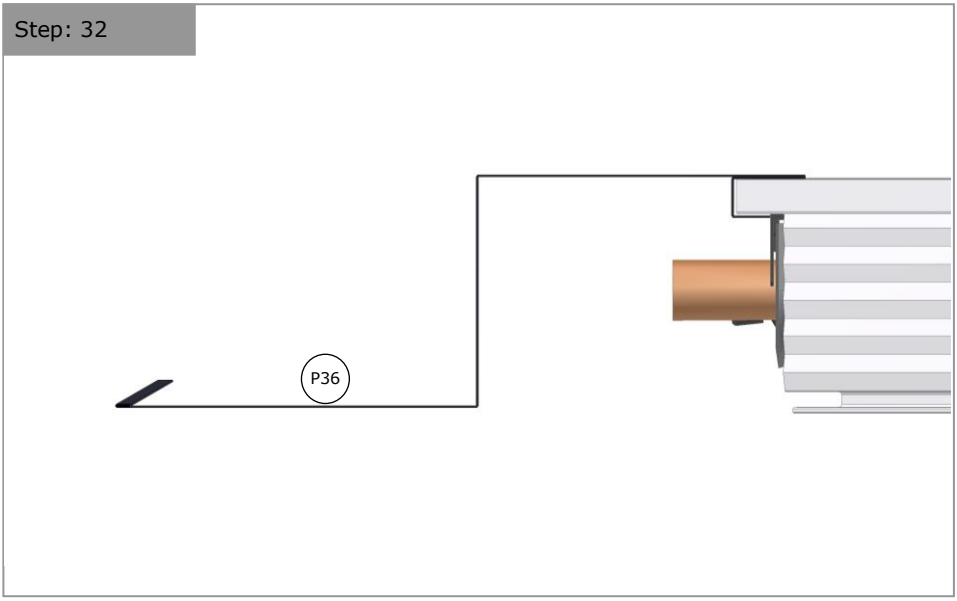
Step: 31

Fit the left lateral part to the collectors profile as shown in Step 32.

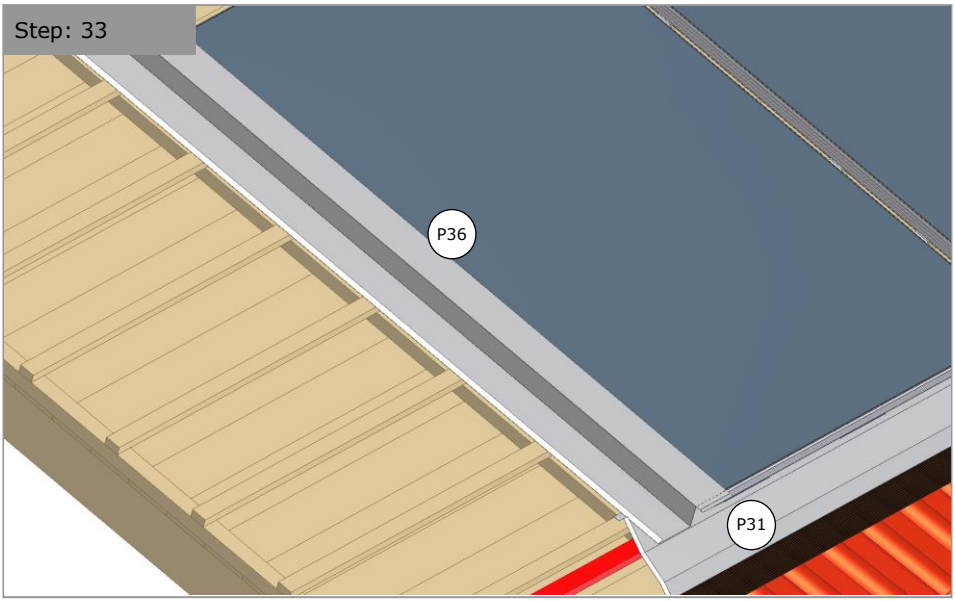
On the lower side the upper perforation should be aligned with the collectors profile as shown in Step 34.



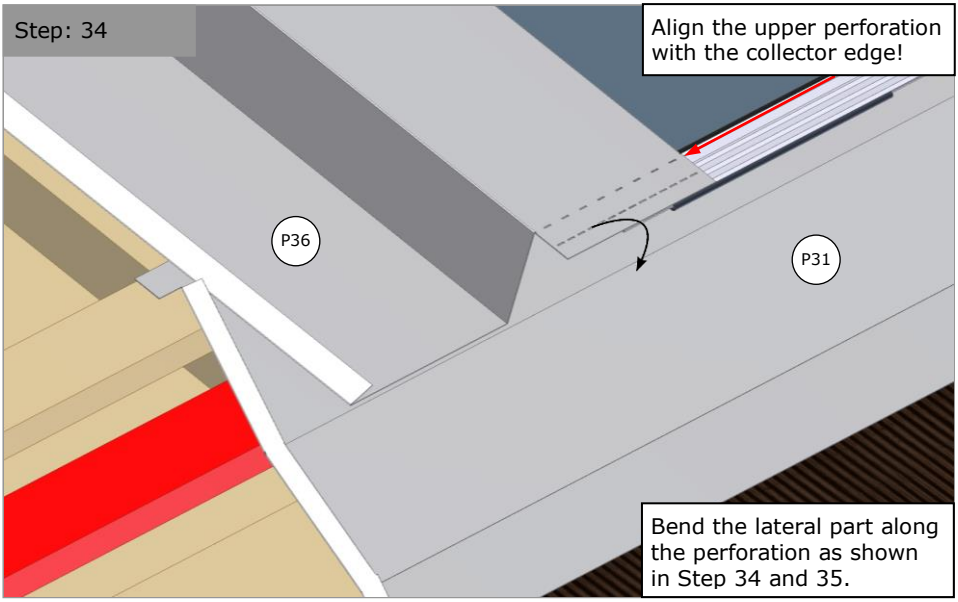
Step: 32



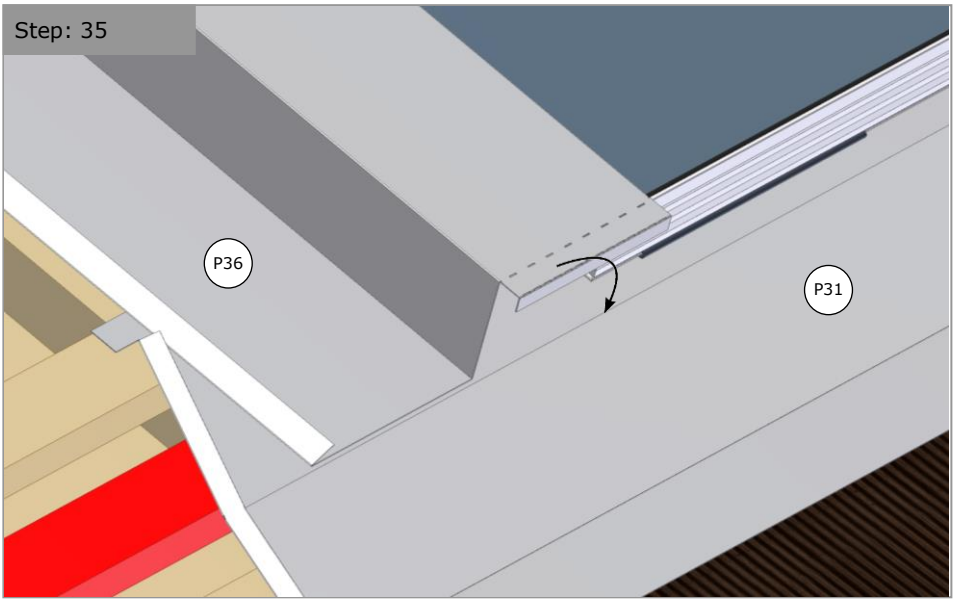
Step: 33



Step: 34

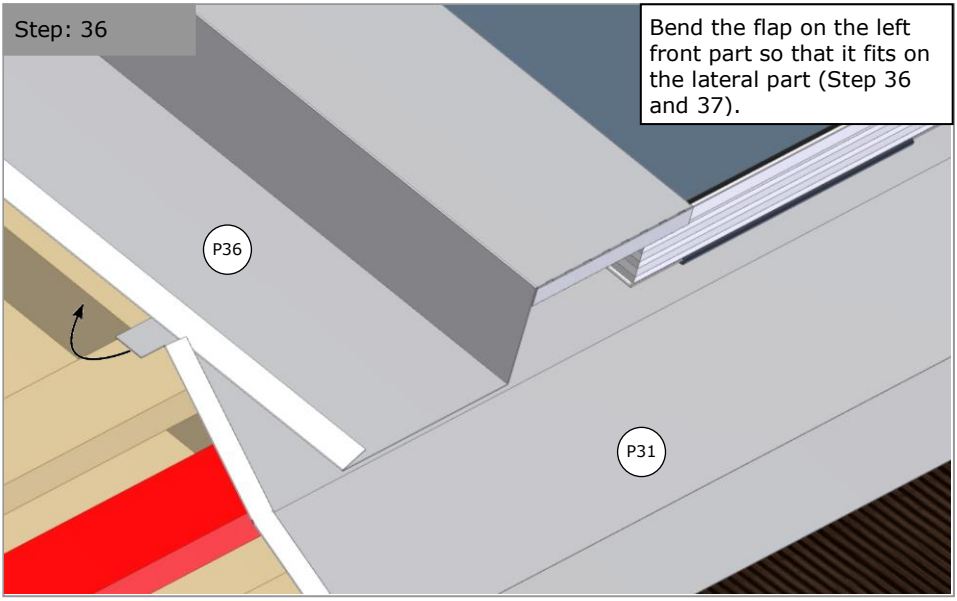

Align the upper perforation with the collector edge!
P36
P31
Bend the lateral part along the perforation as shown in Step 34 and 35.

Step: 35

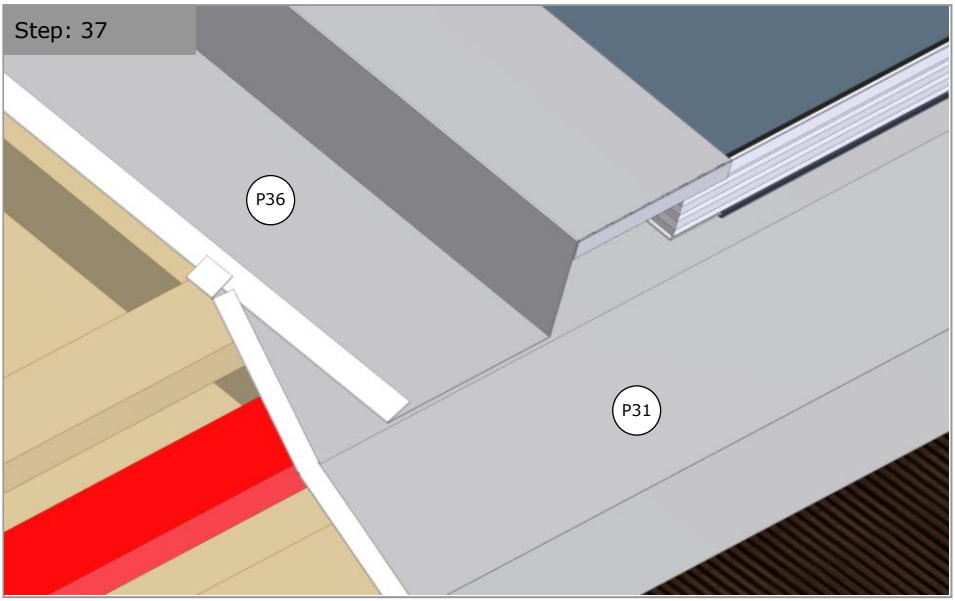


Step: 36

Bend the flap on the left front part so that it fits on the lateral part (Step 36 and 37).

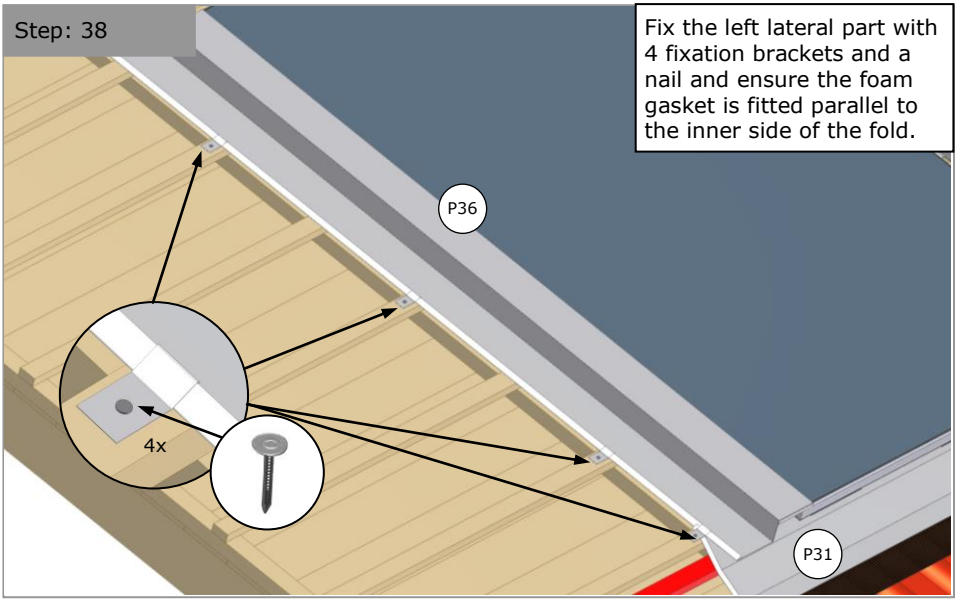


Step: 37

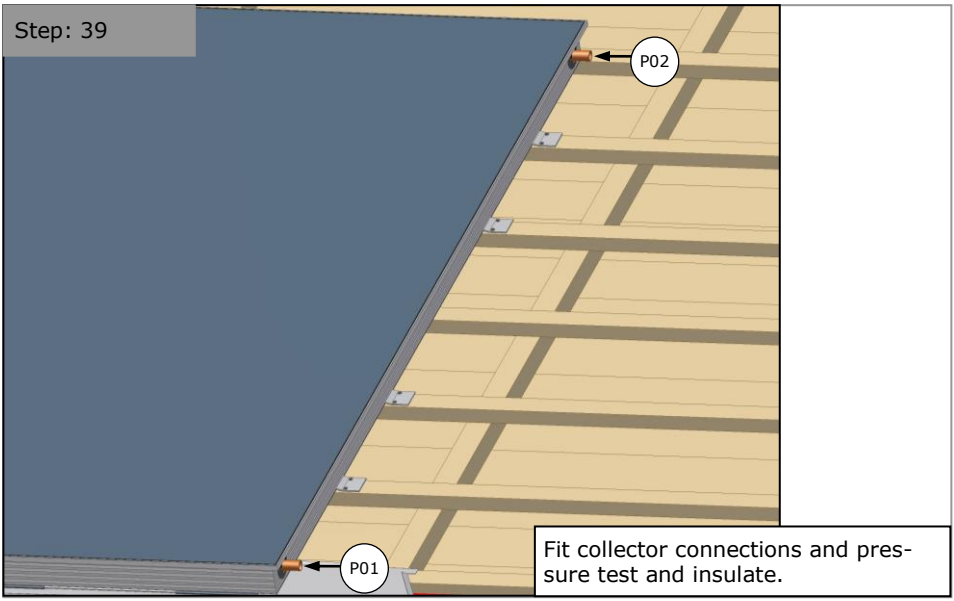


Step: 38

Fix the left lateral part with 4 fixation brackets and a nail and ensure the foam gasket is fitted parallel to the inner side of the fold.



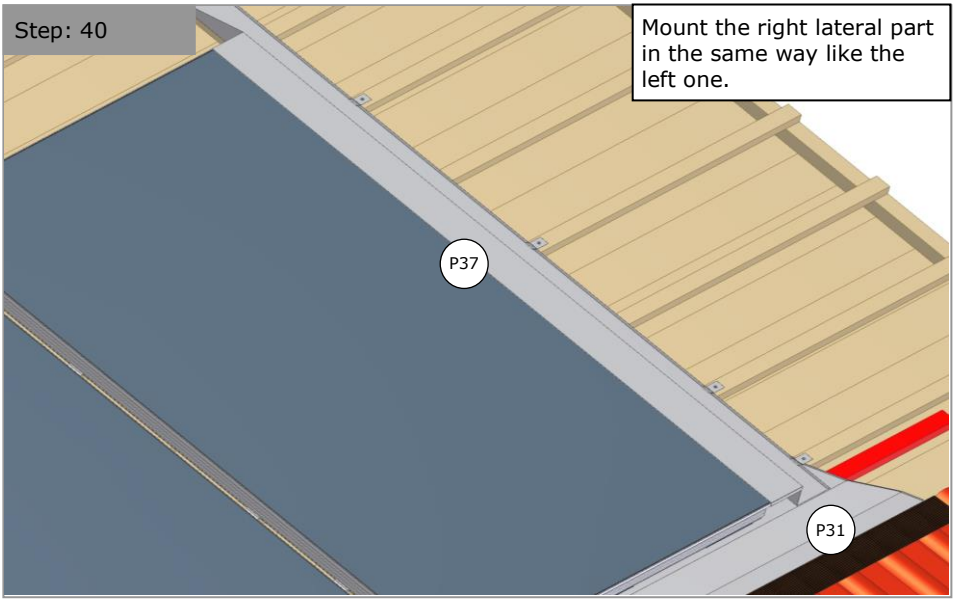
Step: 39



Fit collector connections and pressure test and insulate.

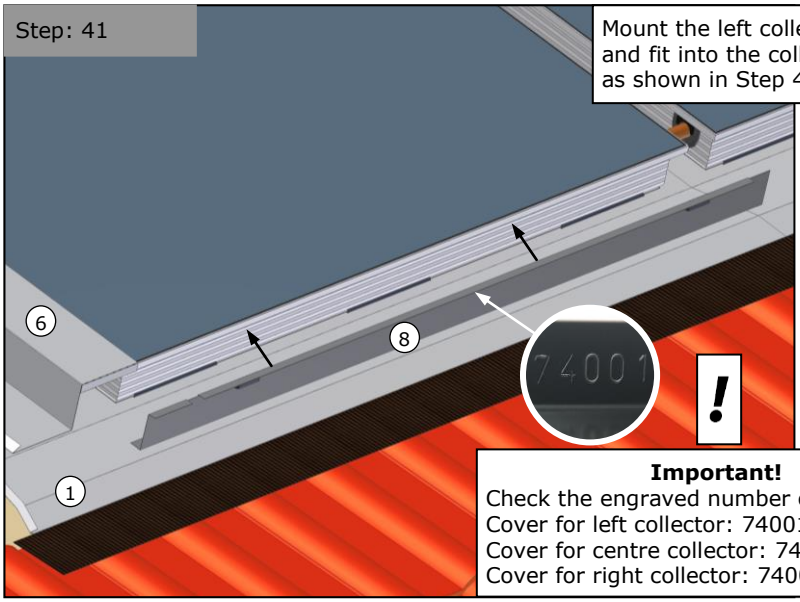
Step: 40

Mount the right lateral part in the same way like the left one.



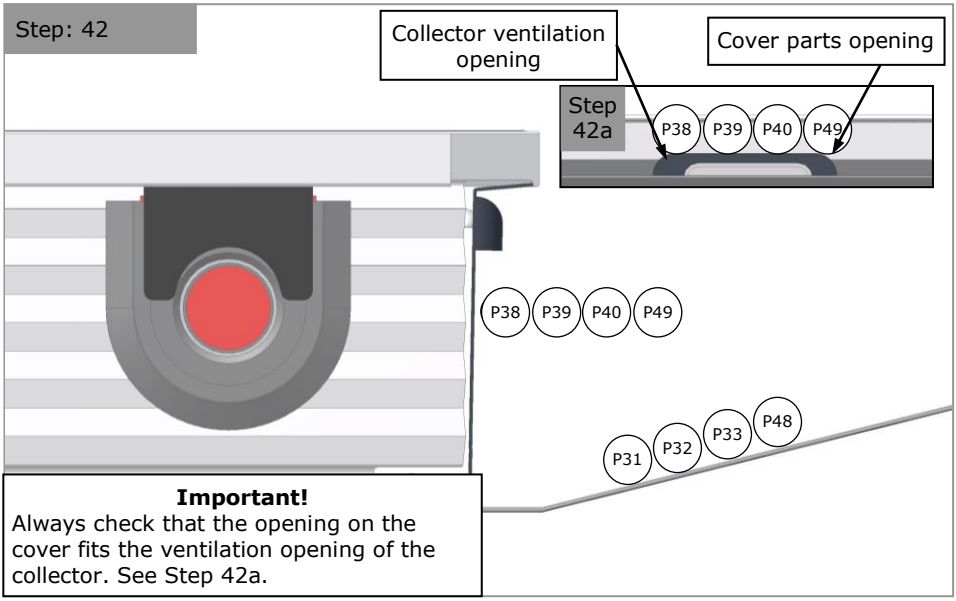
Step: 41

Mount the left collector cover and fit into the collector profile as shown in Step 42 and 43.



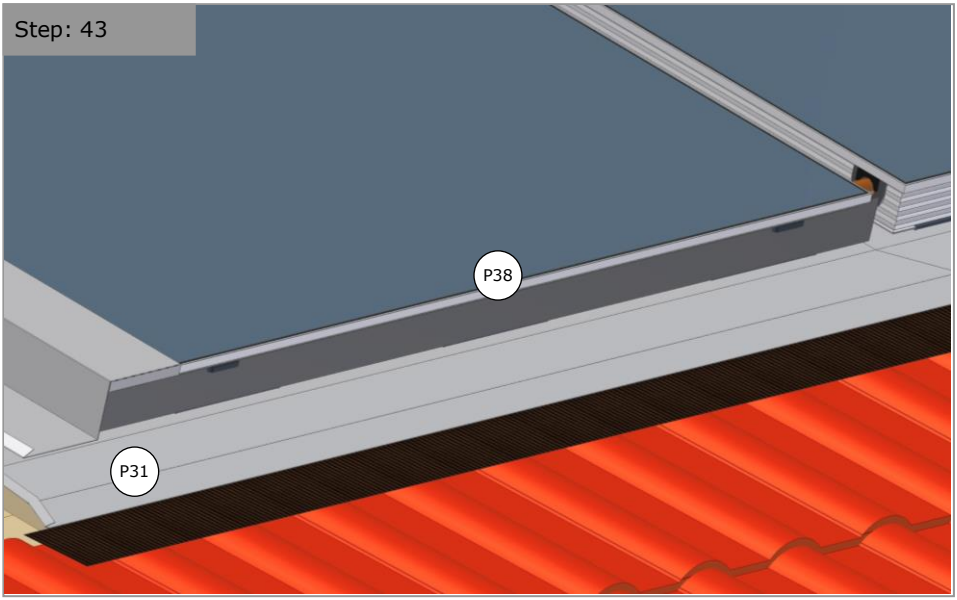
Important!
Check the engraved number on the cover.
Cover for left collector: 74001
Cover for centre collector: 74002
Cover for right collector: 74003

Step: 42



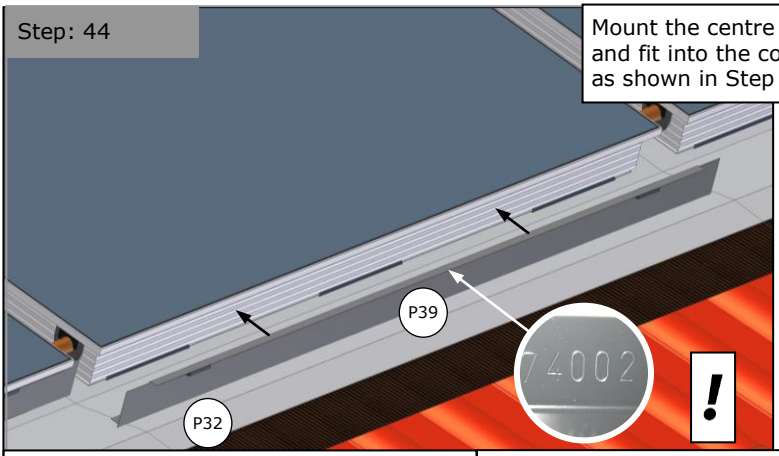
Important!
Always check that the opening on the cover fits the ventilation opening of the collector. See Step 42a.

Step: 43



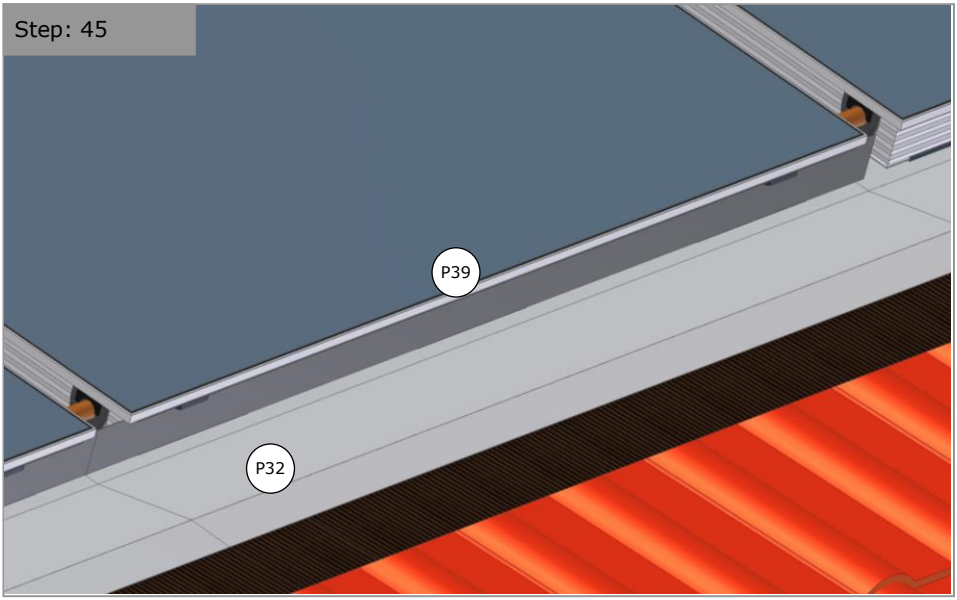
Step: 44

Mount the centre collector cover and fit into the collector profile as shown in Step 42 and 45.



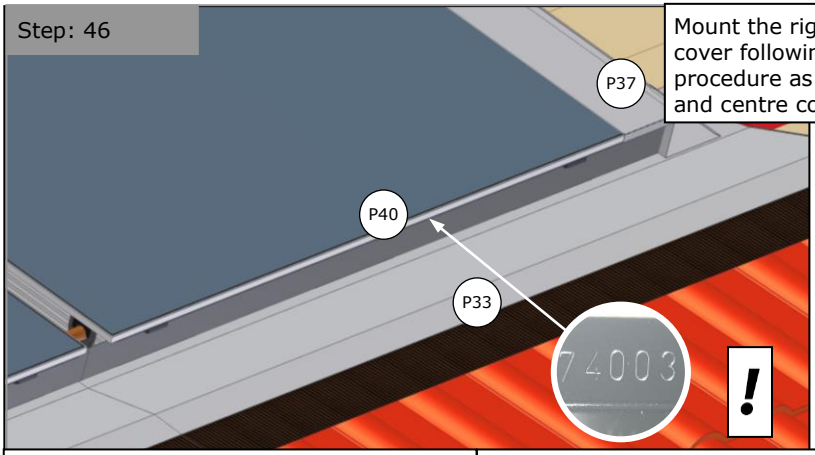
Important!	**Important!**
Always check that the opening on the cover fits the ventilation opening of the collector. See Step 42a.	Check the engraved number on the cover. Cover for left collector: 74001 Cover for centre collector: 74002 Cover for right collector: 74003

Step: 45



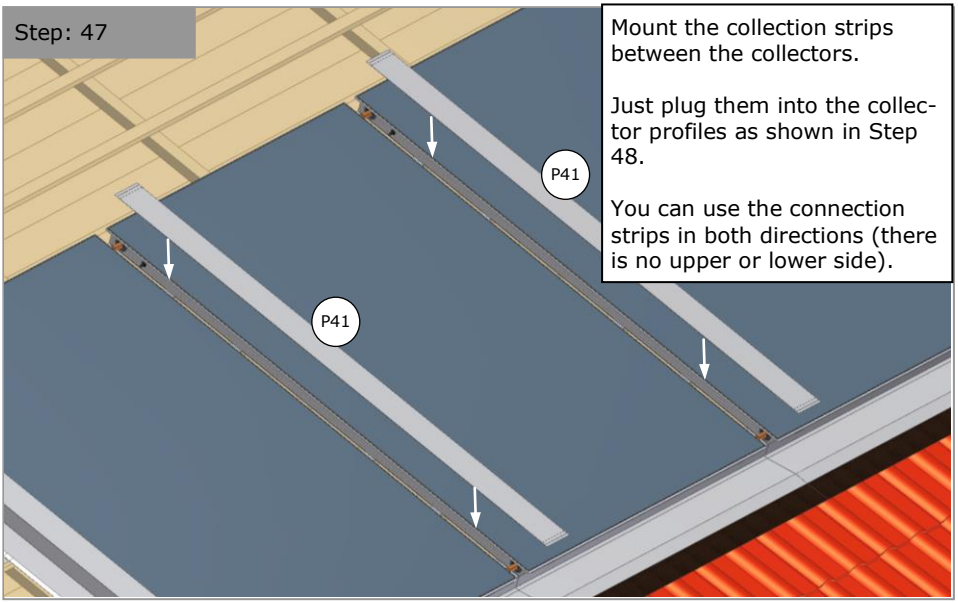
Step: 46

Mount the right collector cover following the same procedure as for the left and centre cover



Important! Always check that the opening on the cover fits the ventilation opening of the collector. See Step 42a.	**Important!** Check the engraved number on the cover. Cover for left collector: 74001 Cover for centre collector: 74002 Cover for right collector: 74003

Step: 47

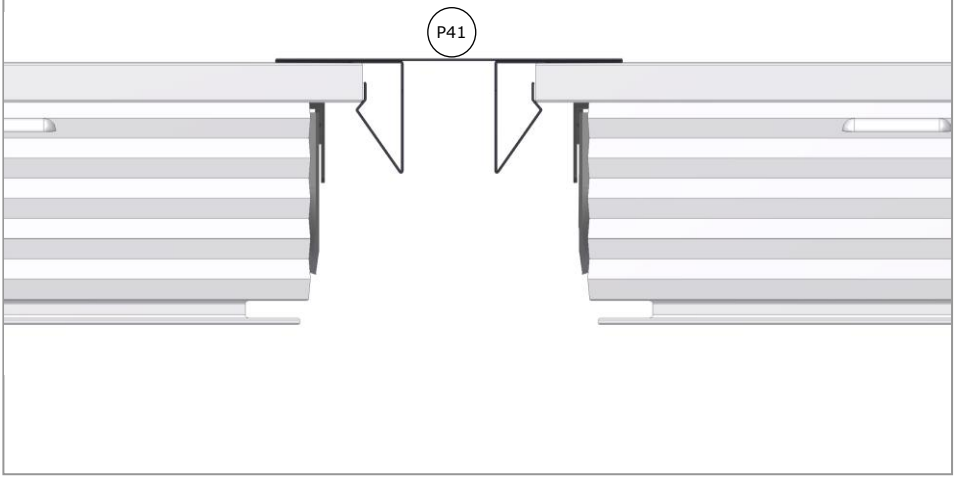


Mount the collection strips between the collectors.

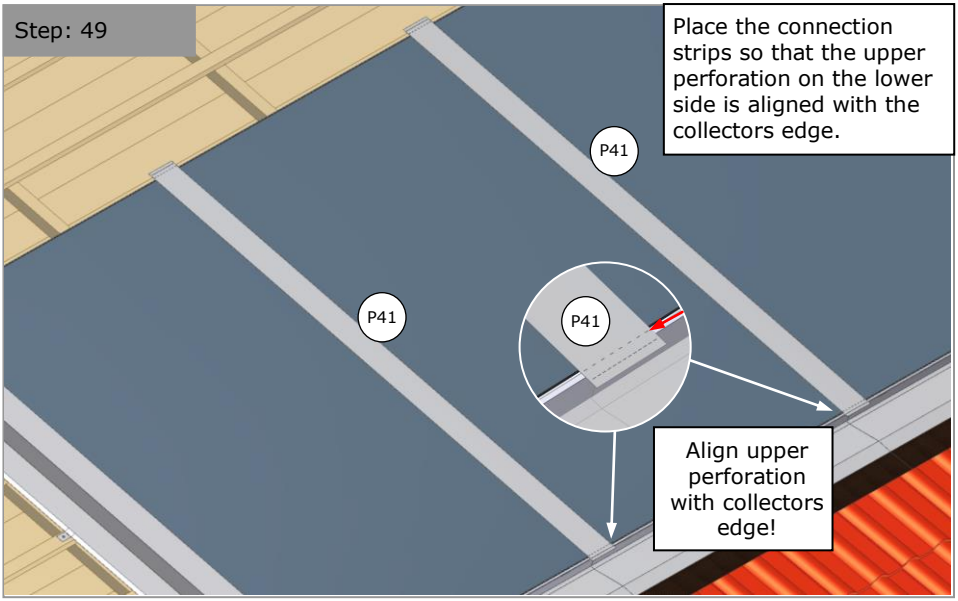
Just plug them into the collector profiles as shown in Step 48.

You can use the connection strips in both directions (there is no upper or lower side).

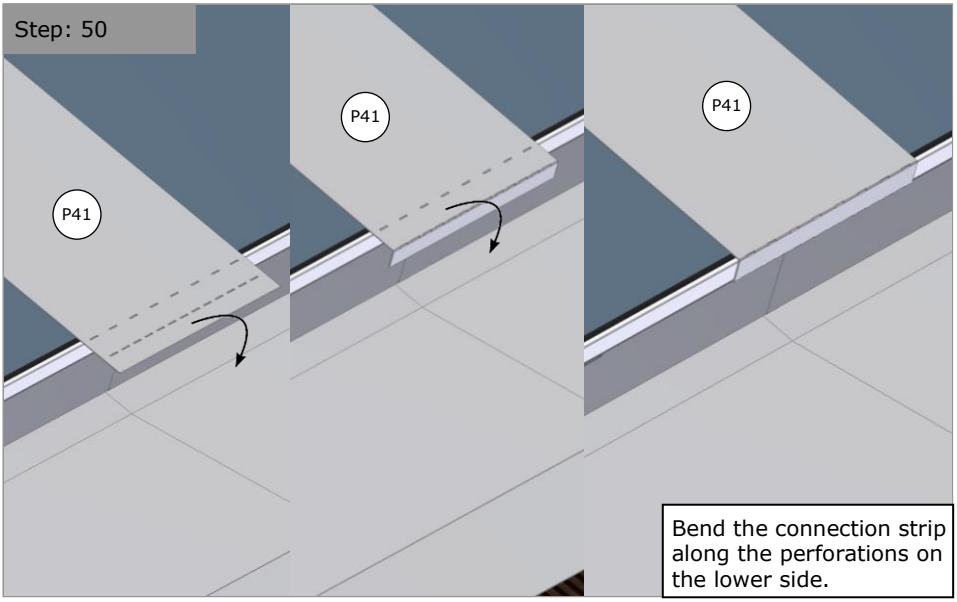
Step: 48



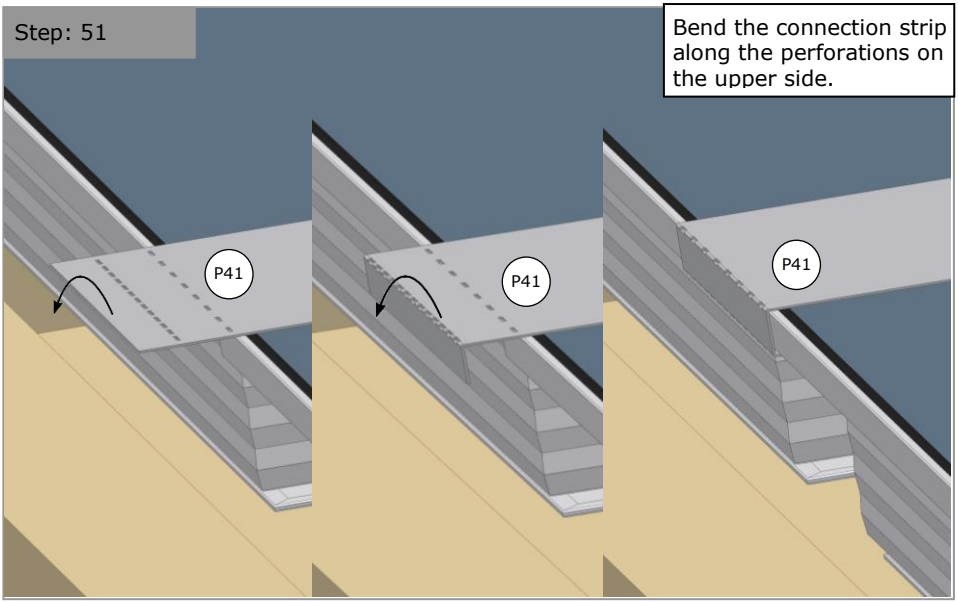
Step: 49


P41
P41
P41
Place the connection strips so that the upper perforation on the lower side is aligned with the collectors edge.
Align upper perforation with collectors edge!

Step: 50

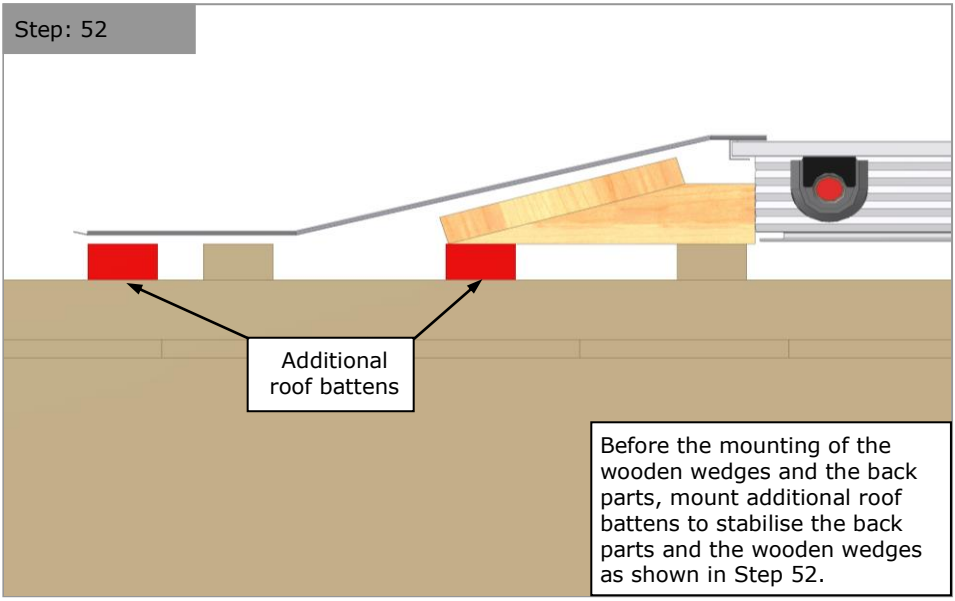


Step: 51



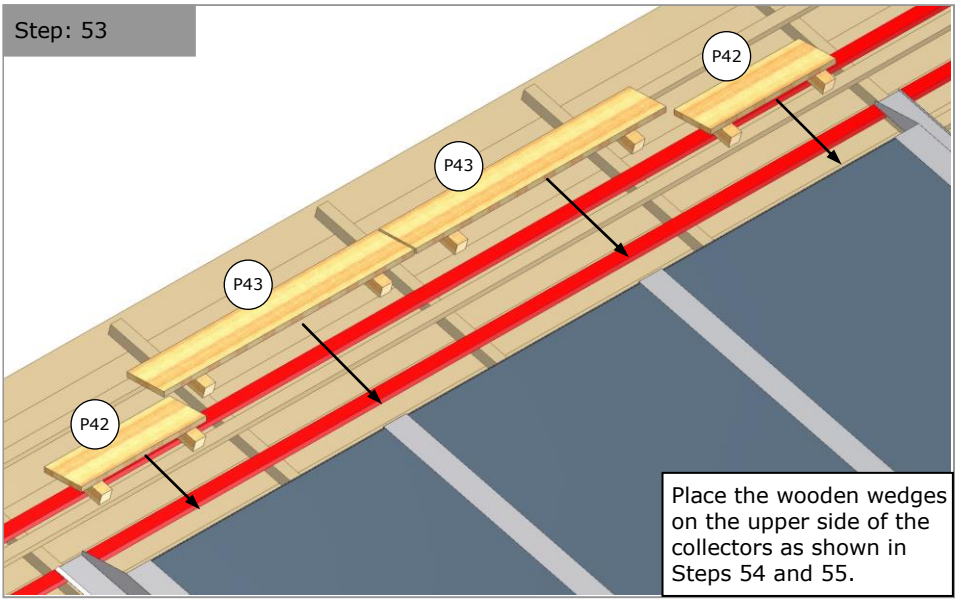
Bend the connection strip along the perforations on the upper side.

Step: 52

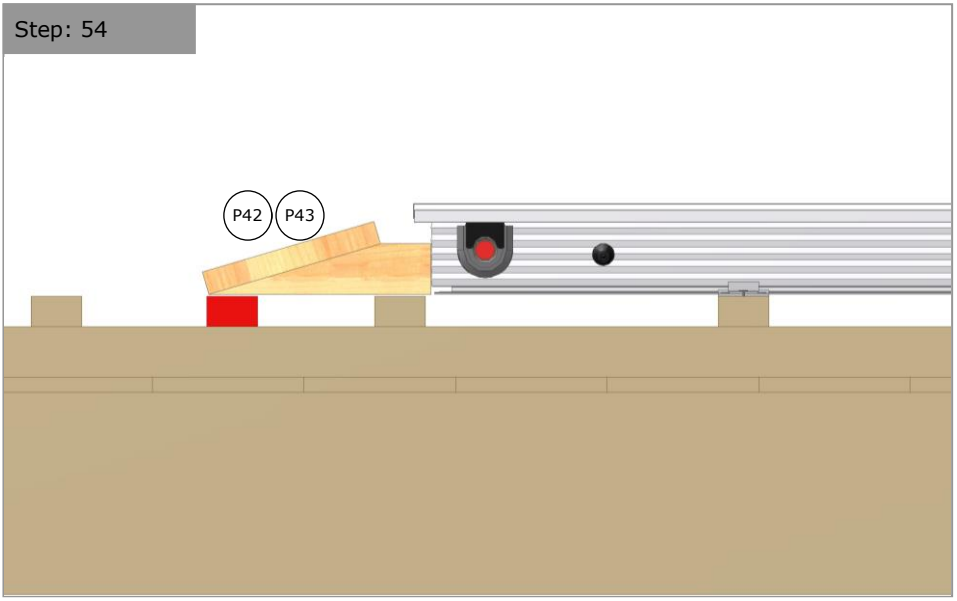


Before the mounting of the wooden wedges and the back parts, mount additional roof battens to stabilise the back parts and the wooden wedges as shown in Step 52.

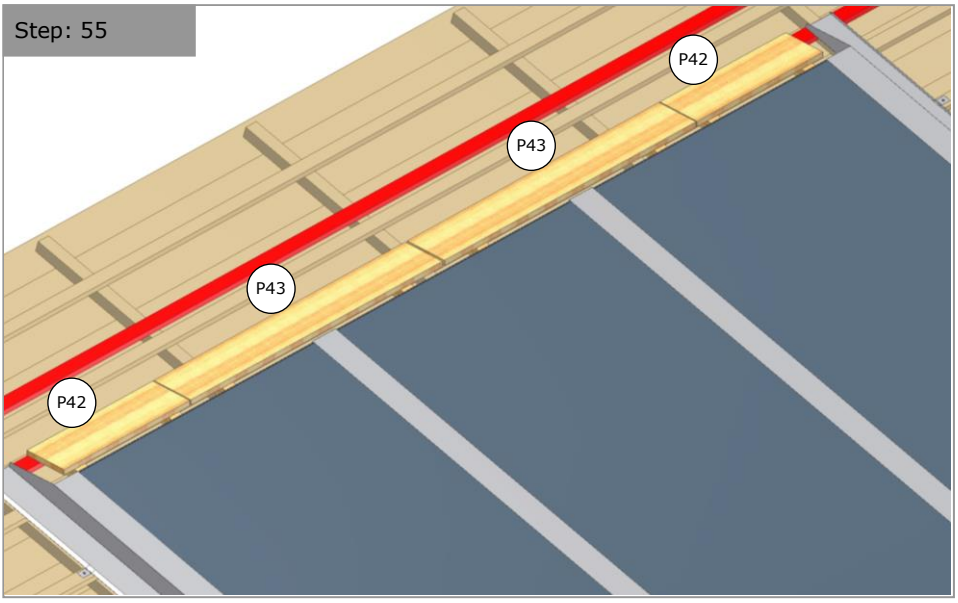
Step: 53



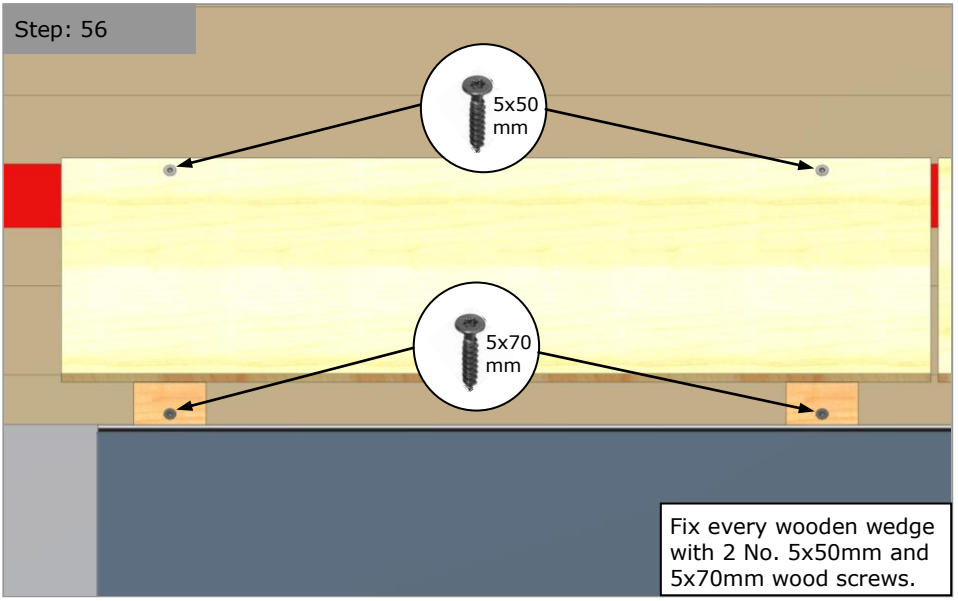
Step: 54



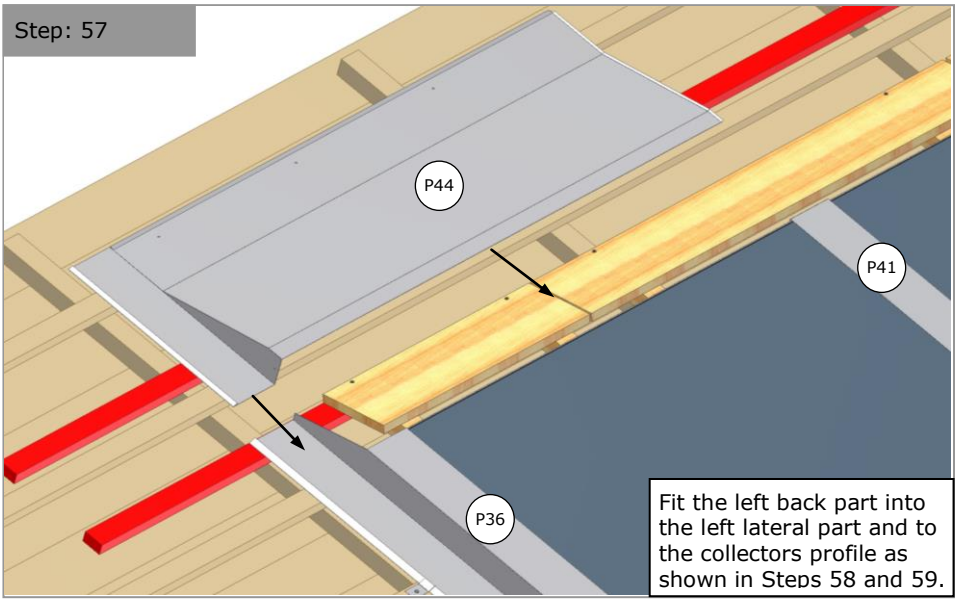
Step: 55



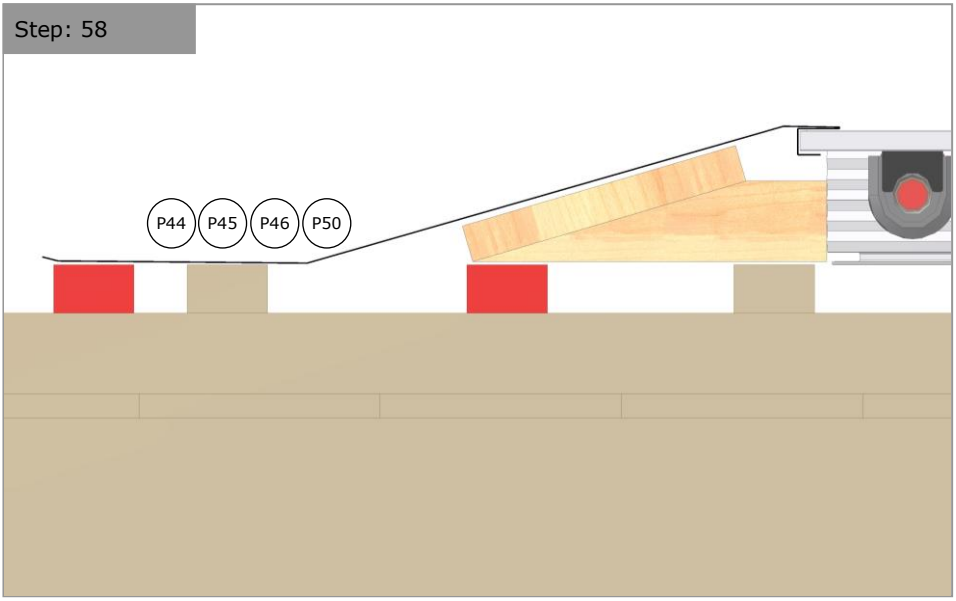
Step: 56



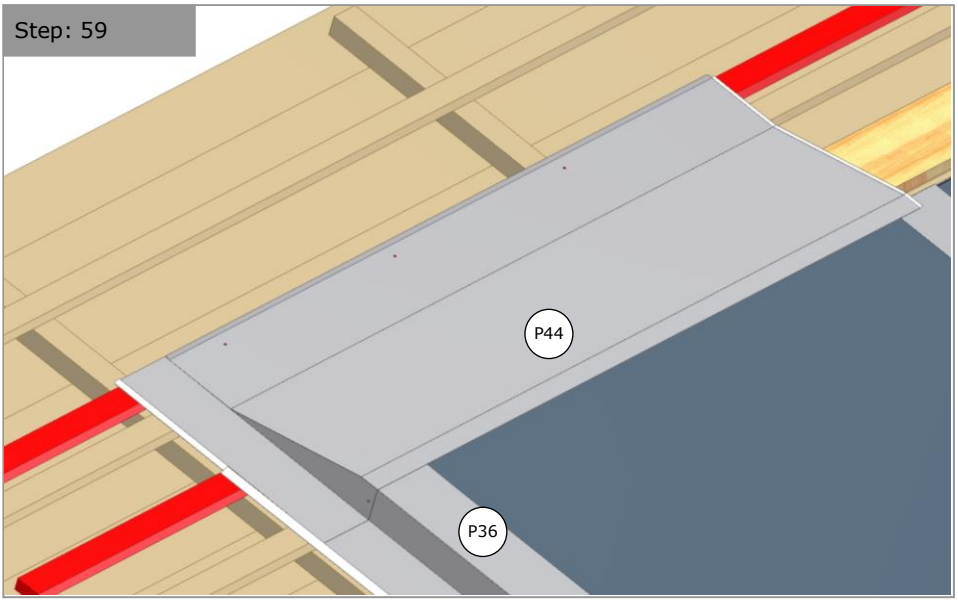
Step: 57



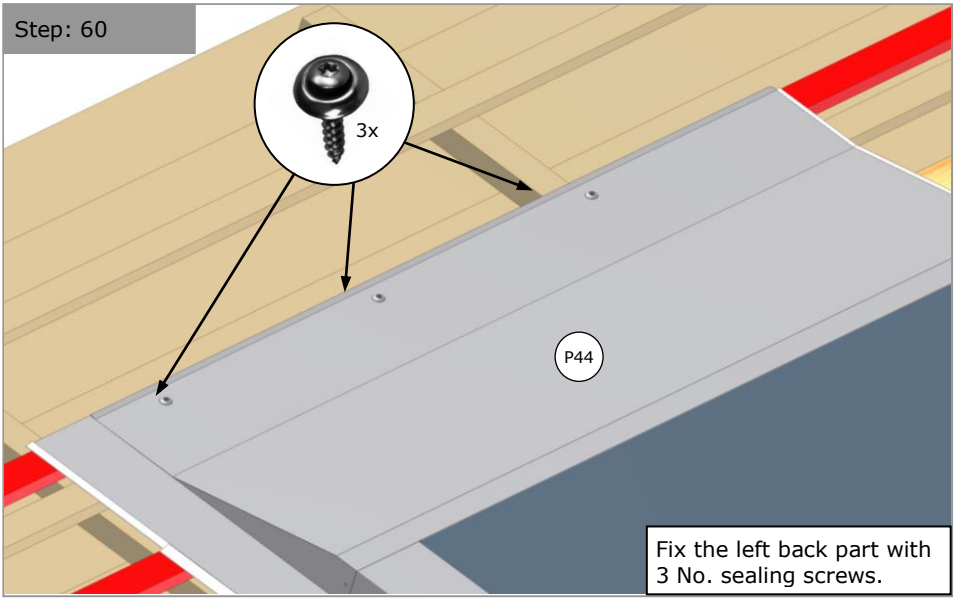
Step: 58



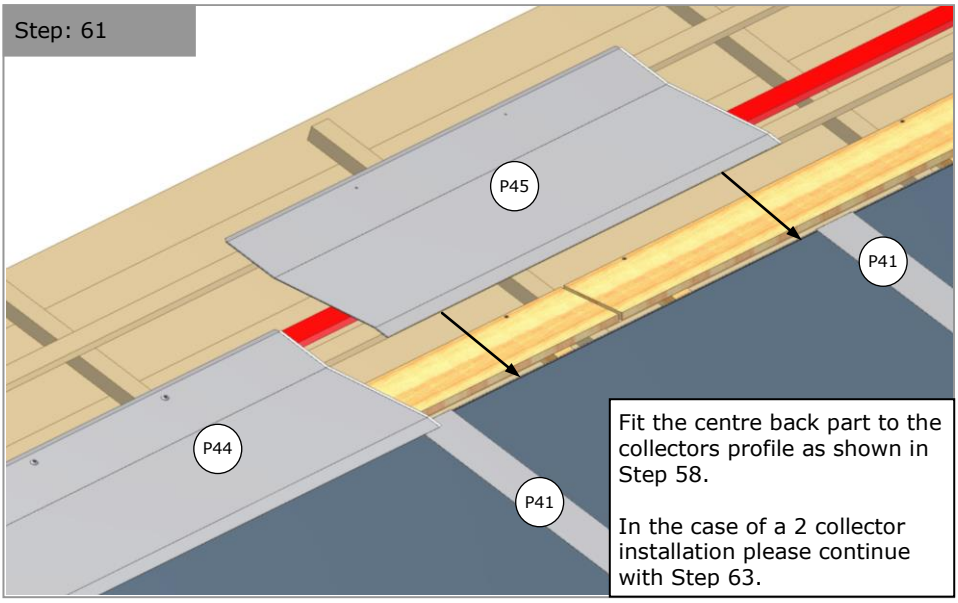
Step: 59



Step: 60



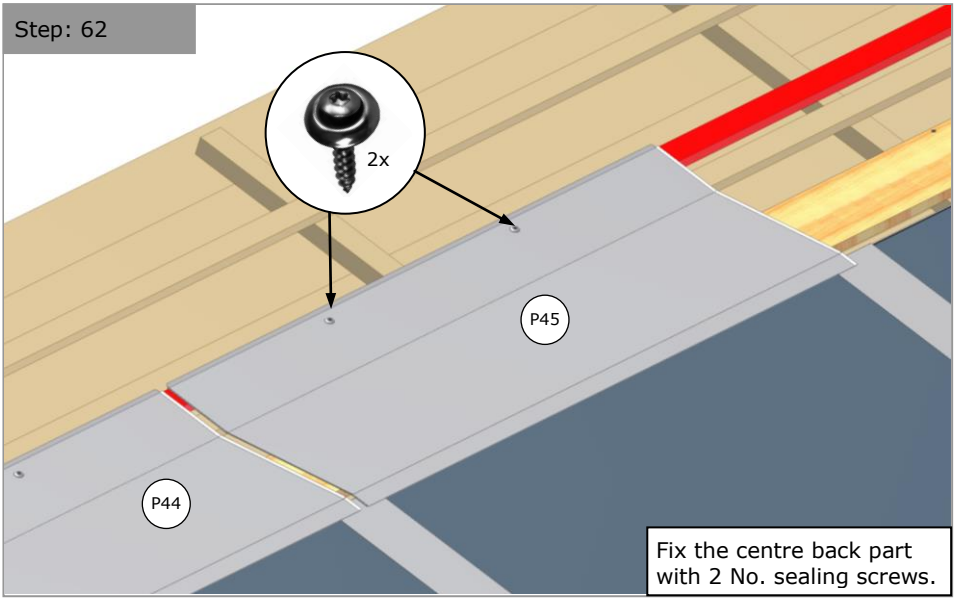
Step: 61



Fit the centre back part to the collectors profile as shown in Step 58.

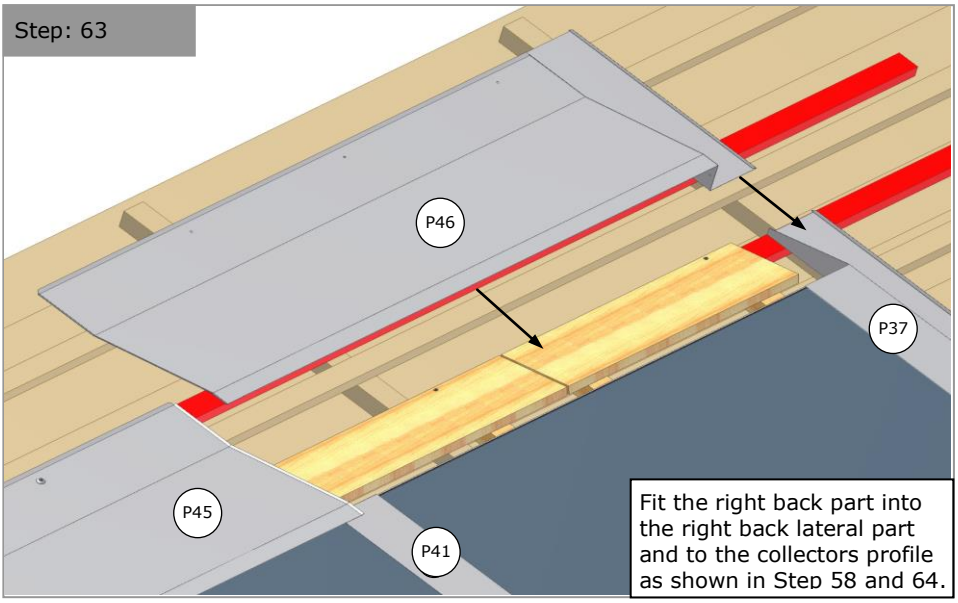
In the case of a 2 collector installation please continue with Step 63.

Step: 62



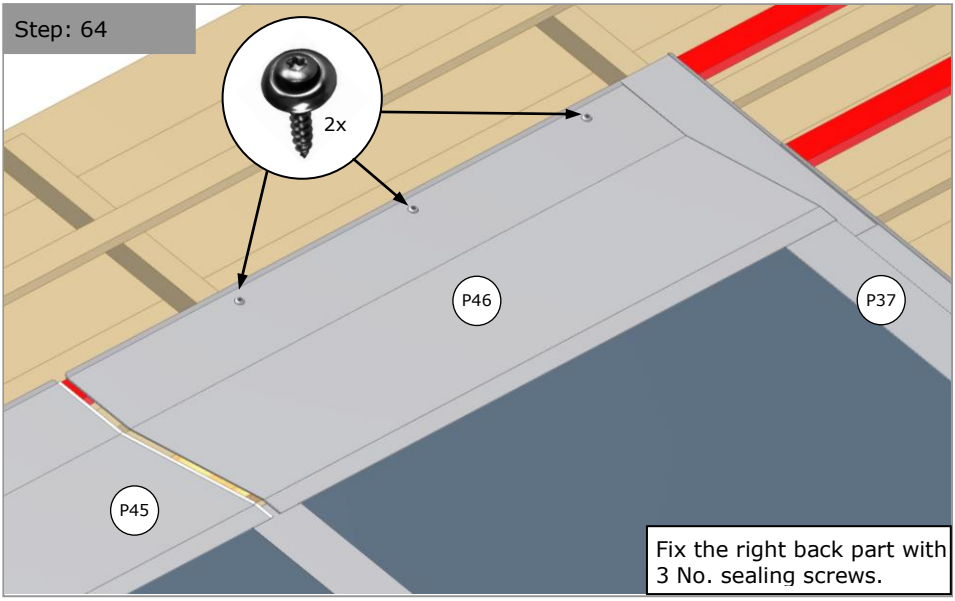
Fix the centre back part with 2 No. sealing screws.

Step: 63

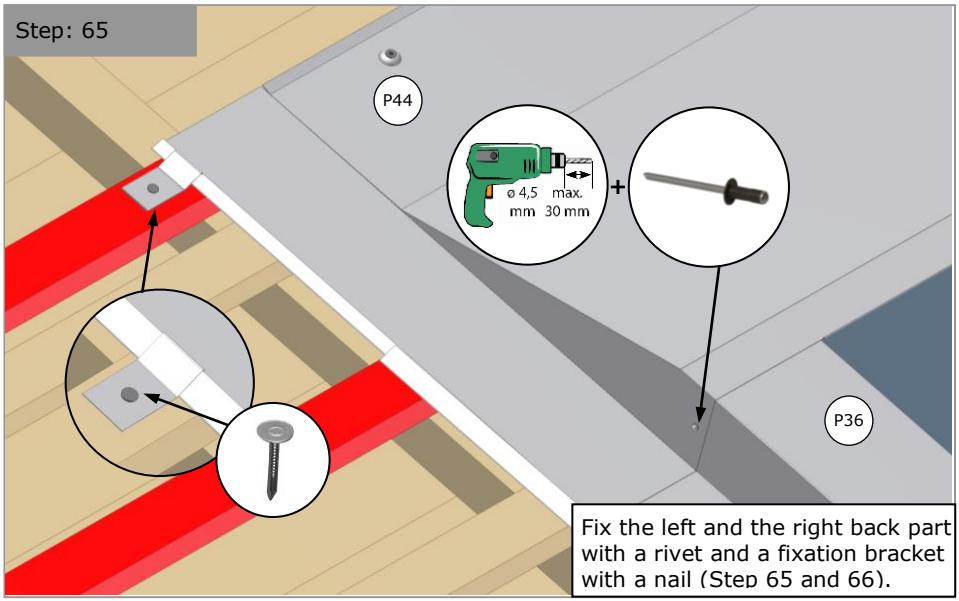


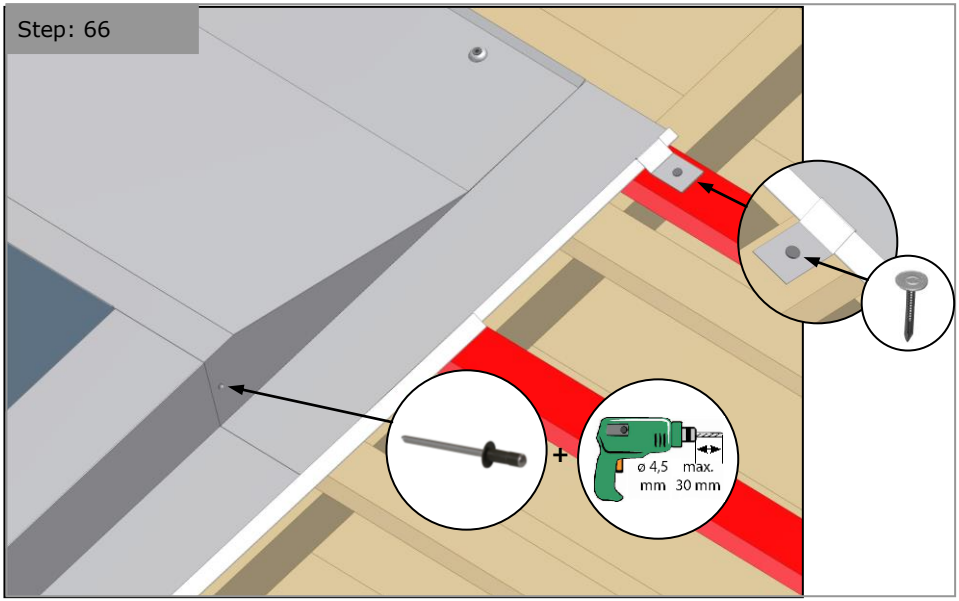
Fit the right back part into the right back lateral part and to the collectors profile as shown in Step 58 and 64.

Step: 64

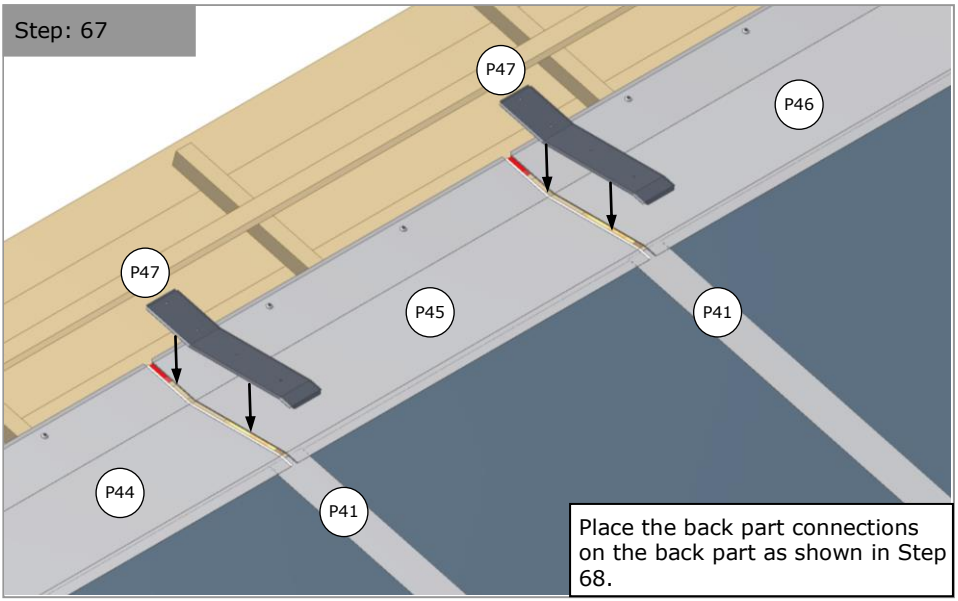


Fix the right back part with 3 No. sealing screws.


Step: 65
P44
ø 4,5 max.
mm 30 mm
P36
Fix the left and the right back part with a rivet and a fixation bracket with a nail (Step 65 and 66).

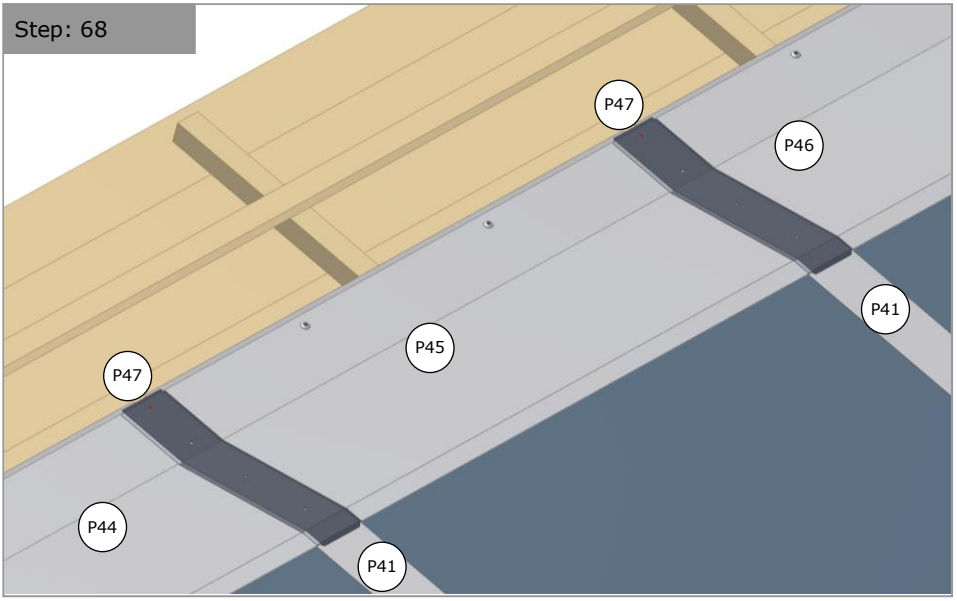

Step: 66
ø 4,5 max.
mm 30 mm

Step: 67



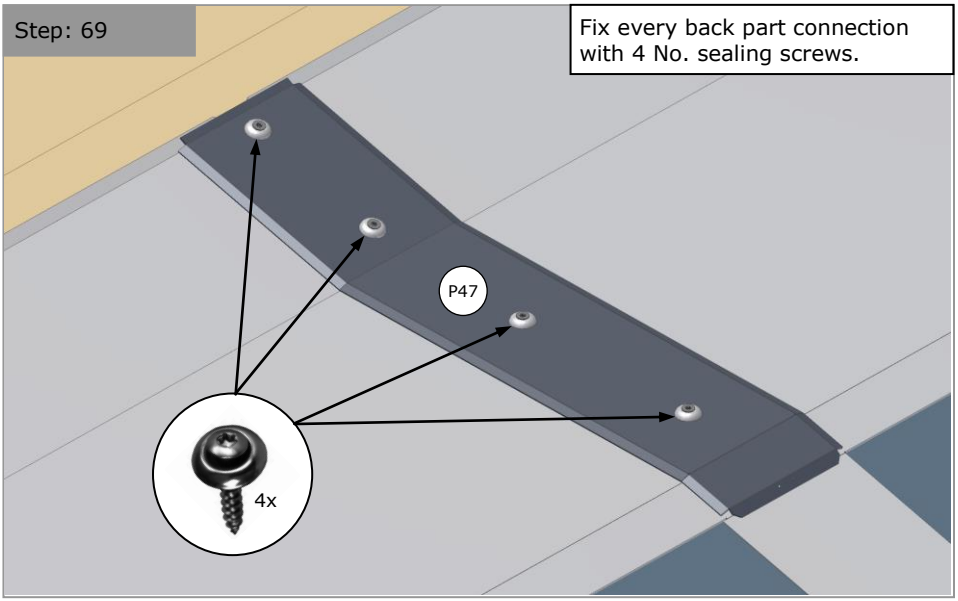
Place the back part connections on the back part as shown in Step 68.

Step: 68



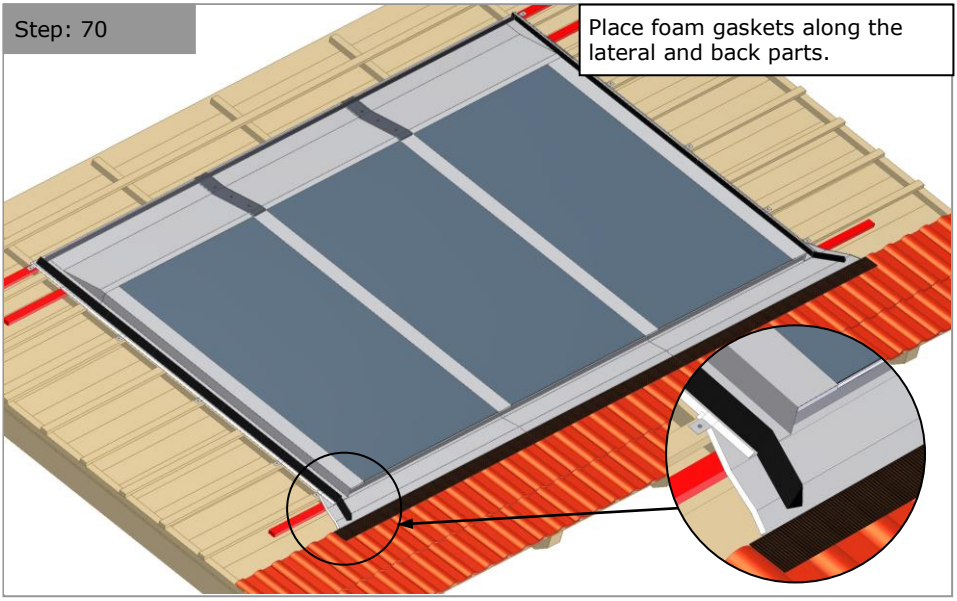
Step: 69

Fix every back part connection with 4 No. sealing screws.



Step: 70

Place foam gaskets along the lateral and back parts.



Step: 71

Finally form the aluminium apron to the contours of the roof tiles as shown in Step 71 and fix it with the adhesive strip.

Take care that the roof tiles are clean!

6 Operation & Maintenance

Connections should be double checked prior to commissioning of the system. Please refer to the On Site Guide for guidance on how to commission and operate the solar system.

Risk of scalding! Before carrying out any maintenance work on the system ensure that it is safe to do so. The solar system must be decommissioned before work can be carried out. Refer to the On Site Guide for a maintenance schedule of the complete system. Check for leaks at the collector connections and other connections in the system. Also ensure pipe insulation is intact and in good condition.

7 Spare Parts

SOL202COL		
Part No.	Spare No.	Description
P31	74011	left front part
P32	74012	centre front part
P33	74013	right frontpart
P34	74220	lateral fixation bracket
P35	74222	centre fixation bracket
P36	74111	left lateral part
P37	74113	right lateral part
P38	74001	left collector cover
P39	74002	centre collector cover
P40	74003	right collector cover
P41	74230	connection strip
P42	74090	wooden wedge 600 mm
P43	74091	wooden wedge 1200 mm
P44	74061	left back part
P45	74062	centre back part
P46	74063	right back part
P47	74070	back part connection
P48	74014	front part single collector
P49	74004	single collector cover
P50	74064	back part single collector
R02893-1	R02893-1	manual
	74357	bag of fittings

Table 7: Spare parts

8 Decommissioning

Risk of scalding! Before carrying out any decommissioning work on the integrated roof kit, please ensure the solar system has been decommissioned.

If the product is being recycled, local waste disposal laws must be adhered to.

9 Technical Data

Weight empty	33 kg
Dimensions	
- length	1730mm
- width	1170mm
- height	83mm
Heat transfer medium	SOLHT20
Max op. pres. [bar]	10
Tilt angle	
- min	20°
- max	75°

Collector array [m²]	2	4	6	8
Cu pipe [mm]	15	15	22	22
Wind / snow load [kN/m²]	1.9	1.9	1.9	1.9

Table 8: Collector technical data

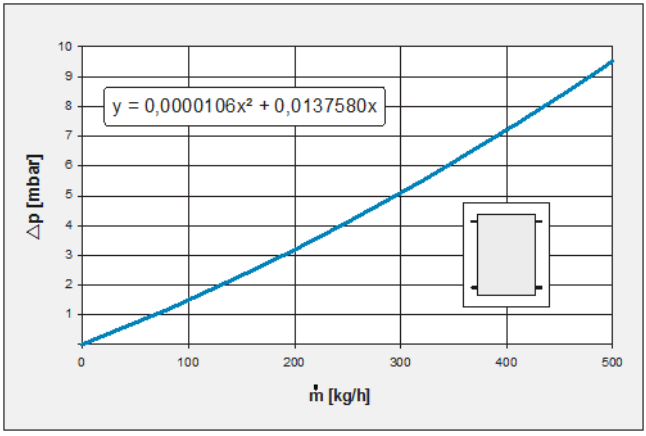


Figure 5: Pressure loss collector for anti-freeze / water mixture (40% / 60%) at a thermal conducting temperature of 50° C.